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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and to improve the character of the service rendered to the public.

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SHIPS LOST, CONDEMNED, ETC., IN 1900.

Lloyd's Register of British and Foreign Shipping have published the usual annual return of all ships lost, condemned, &c., during the year. This includes ships of all nations, sail and steam, of 100 tons and upwards. The total number of steamers lost or otherwise put out of commission during the year 1900 was 296, with a net register tonnage of 235,247 and a gross register of 386,304 tons. Of these 137 of 192,827 tons gross belonged to the United Kingdom, and 16 of 12,788 to British Colonies. The next on the list is the Norwegian steam fleet, which lost 28 steamers of 28,683 tons; Germany follows with 25 steamers of 25,643 tons, and France comes next with 20 steamers of 34,536 tons gross. The United States takes the next position with 16 steamers of 10,529 tons, exclusive of vessels trading on the Great Lakes. An analysis of the losses under the flags of the maritime nations is always interesting, as by means of ratios and a study of the cause of the removal of the ships we are able to arrive at a fair estimate of the flag which represents the greatest factor of safety obtainable afloat. Although the United Kingdom's loss looks high, it is comparatively low, even taking the bald statement, for the loss of ships in number represents 1.95 of the total owned, whilst the tonnage lost represents 1.67 of the total. Taking the United States, the ratios are 2.32 and 1.20, respectively, whilst the Norwegian ratios are 3.47 and 3.75, respectively, German, 2.07 and 1.19, and French 3.02 and 3.28, respectively. The Italian losses are represented by 3.21 per cent of the number of vessels owned and 4.05 per cent of the tonnage owned, Spanish losses being in the ratios of 3.08 and 3.34, respectively. The Dutch come out at 1.38 and 0.94, respectively, the Swedish figures being 0.74 and 0.98. To be fair it would be right to delete for comparative purposes the ships "broken up, condemned, &c.," for their removal has not entered into the question of safety at all. Of English ships no fewer than 32 of 50,873 tons came under this category, the next in amount being France with four vessels of 11,164 tons. Germany only had one of 201 tons, and the United States one of 113 tons. Under the heading "wrecked" the United Kingdom has 49 vessels of 80,059 tons, and of missing steamers 18 of 15,354 tons. Deducting the condemned ships the United Kingdom comes out with a loss ratio of 1.49 per cent of ships owned and 1.23 of tonnage owned. In sailing vessels the losses are heavier, the United Kingdom losing 76 vessels of 52,818 tons, and British Colonies 39 vessels of 12,679 tons. Norway heads this list, however, with a loss of 124

vessels of 69,684 tons, and the United States also takes precedence of the United Kingdom, scoring 80 vessels of 45,625 tons. France lost 29 vessels of 16,989, Germany 23 of 24,935 tons, and Italy 37 vessels of 14,717 tons. The ratios of losses in this class of ship are, taking the number of vessels and tonnage owned respectively: United Kingdom 4.01 and 3.06, Norway 7.88 and 7.95, United States, 3.90 and 3.95, France 5.25 and 5.69, Germany 4.59 and 5.09, and Italy 4.28 and 3.32. There are comparatively few vessels condemned amongst sailing ships, Norway heading the list with 20, of 10,475 tons, Italy following with 17, of 5,423 tons, and the United Kingdom with 8, of 2,174 tons.

COAL SHIPMENTS.

Coal exportations from the United States during the fiscal year just ended, as shown by the treasury bureau of statistics, amounted to \$22,317,496, against \$19,502,813 in the fiscal year 1900, \$13,661,028 in 1899, \$11,008,643 in 1897, \$10,646,062 in 1896, and \$8,391,026 in 1891. Thus the value of coal exportations from the United States has doubled since 1897 and nearly trebled in the decade. These figures relate to values. Measured by quantity, the increase has been even greater, the exports in 1901 being 7,675,149 tons, against 2,399,039 tons in 1891, thus making the total exports of 1901 in quantity more than three times as much as in 1891. The United States now stands third in the list of coal exporting countries of the world. The exports in 1901 are thus seen to have equalled, within about 600,000 tons, the entire output of Alabama for 1900, which was 8,273,362 tons.

WARSHIPS FOR THE JAPANESE NAVY.

As an indication of the manner in which the Japanese government is increasing its already formidable navy, there are at the present time no less than eleven vessels of different types either being built or nearing completion for the Japanese. Of these the cruiser Niitaka and the torpedo boat destroyers Harusame, Murasame, Hayatori, and Asakiri, are being constructed at Yokosuka, and the cruiser Tsushima at Kure. Each of the above-named cruisers will be of 2,800 tons displacement, with a speed of 20 knots per hour, their principal armaments consisting of 4 7-inch guns. The battleship Mikassa, which is of 15,200 tons displacement, and has a speed of 18 knots per hour, is being completed at the works of Messrs. Vickers, Sons and Maxim, at Barrow-in-Furness, England. The torpedo boat destroyers Akatsaki, Kasumi, Asashiroo, and Shirakumo are also being built in England. These vessels are of 310 tons displacement, 6,200 horse power, and are expected to develop a speed of 32 knots per hour, and, in addition to being provided with an equipment of torpedoes and tubes, will each be armed with one 12-pounder and five 6-pounder quick-firing guns. Some of the vessels enumerated will be ready for sea during the present year, and the whole of them by the end of next year.

WIRELESS TELEGRAPHY.

During the passage of the British channel fleet from Portsmouth to Berehaven messages were exchanged by wireless telegraph between vessels ninety miles apart. Communication being suspended owing to some breakage in the apparatus the instrument on one vessel was adjusted to send a message to Portland, and, to the surprise of the signalling staff, that station was heard "talking" to a second ship. The distance at which this information was taken was 103 miles as the crow flies, a record so far as the naval service is concerned.

THE GEORGIAN BAY-OTTAWA CANAL.

The feasibility of the Georgian bay canal, the proposed new waterway to connect the great lakes with Montreal and Ottawa, and the superior advantages it would afford, are particularly emphasized by George Wisner, C. E., of Detroit, Mich., who was recently in Ottawa, consulting with the engineers of the canal company. Mr. Wisner is one of the greatest authorities on the continent on the subject of waterways, and his unbiased opinion, which he freely expresses, goes far to strengthen the claims put forward by the promoters of this big project, and of such national importance to the Dominion.

"In regard to this question," said Mr. Wisner, "one thing strikes me as being certain; and that is the construction of a waterway from the great lakes to the Atlantic in the near future. This waterway will be of sufficient dimensions to allow the passage of the economical freight carriers of the lakes. These dimensions will be for vessels of from 7,000 to 8,000 tons, or say, 400 to 500 feet long, and with 19 to 20 feet draft. The whole question hinges on the dimensions of economical carriers. For ocean traffic vessels will be built of as deep draft as the ports will admit of entering, but the lake routes, where the length of the haul is limited to 1,000 miles or less, it will not pay to construct vessels much larger than the present type of lake carrier. Of the canals built heretofore, none has exceeded 14 feet in depth. The economical carriers cannot pass through these, and are consequently unable to divert freight from the existing lake and railroad lines. With a waterway sufficient to admit of the passage of these lake steamers, the rate at which freight can be transported to the seaboard will control the route over which commerce will go.

"The distance from Chicago to Montreal, via the Georgian bay canal, is practically the same as from Chicago to Buffalo, or, in other words, freight can be loaded at tidewater, in Montreal, for the same cost as to Buffalo. Under present conditions, the rate from Buffalo to New York is about \$1 per ton. This means that, allowing for fifty cents per ton tolls, the freight rates over the Georgian bay route will still be fifty cents per ton cheaper than over the Lake Erie route. There is a very strong probability that if the Georgian bay canal is built, a canal connecting with it will be constructed from Montreal to New York. The distance, by that route, between Chicago and New York would be 100 miles shorter than by the Lake Erie route, and the cost of the canal about \$50,000,000 less than the proposed United States canal.

"There is absolutely no question as to the feasibility of the project. If the whole territory were under the United States control, the work would be gone on with very quickly. I consider that the estimated cost of the work for the Georgian bay canal, \$68,000,000, is well within bounds, and the canal should easily be completed in five years. There are no engineering difficulties which cannot be easily overcome. In connection with the canal, a great deal of horse power could be developed at each of the dams. From the summit to Montreal there is over 600 feet of fall, and with the volume of water in the Ottawa, this means that very valuable water power will be developed at all of these sites."

Contributory Fault of Schooner.—A schooner cannot be held in fault for a collision with a steamer because after she had been placed in a position of peril through the fault of the steamer, and after collision had become inevitable, she changed her course for the purpose of easing the blow. Merchants and Miners' Transp. Co. vs. Hopkins et al., 108 Fed. Rep. (U. S.) 890.



DETROIT.

Special Correspondence to the Marine Record.

Norman B. Conger addressed the officials of the Weather Bureau service at the convention held in Milwaukee last week.

Engineer Edward Harris of the steamer North Land was arrested for abusing one of the firemen a week ago. Bail was furnished and he was released from custody.

A Smith dredge was sunk at the Limekiln Crossing on Saturday through the premature explosion of a submerged dynamite cartridge. The men at work narrowly escaped being blown sky high.

An appropriation of \$15,000 for the construction of a small lightship to be placed at the head of Grosse Pointe met with no takers. Commander Wilson, U. S. N., stationed here, apparently needs to offer further inducements.

The successful wrecking steamer Favorite floated the C. B. Lockwood, Capt. J. C. Dobson, stranded on White shoals, after jettisoning 600 tons of coal. The Lockwood was not leaking badly and proceeded on to Milwaukee, where she will drydock for survey.

A new steel shipbuilding plant is projected for Port Huron by Thomas Dunford, Fred. Dunford and others. The plant will be located on the property south of the lower drydock, and it is understood an option has been secured on the land. Steel vessels will be built.

Models of the car-ferries in service at the Straits of Mackinac are being presented to the German government by the Michigan Central Railroad Co. The work on the full models and equipment was done by an employe of the Detroit Ship Building Co., builders of the original, Frank E. Kirby, consulting engineer.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Detroit, for the week ending September 3: Prevailing wind directions for the week, north; highest velocity, 18, N. E., Sept. 1; mean temperature for the week, 71; highest temperature, 85, on 28th; lowest, 60, on 2d.

The damage to the lumber cargo of the barge Myron Butman, sustained in collision with the steamer Harvard, below Detroit some time ago, has been settled by the insurance company paying \$3,625. As the barge is not insured quite a part of the loss will fall on the owners direct, unless they beat the Harvard in a lawsuit.

The Tampa and schooner Aurania grounded last week in the Straight channel while trying to enter Toledo. Considering the mint of money spent there during the last few years, Assistant Engineer Blunt, in charge of the supervision of the work, will soon have to devise some straighter means of getting in and out of Toledo.

Capt. Geo. P. McKay is here to place the new light-ship on Southeast shoal. It is intended to establish full light-house regulations on this craft, even though she is to be maintained by the Lake Carriers' Association. The keepers will be compelled to keep a regular light-house log in addition to following the other regulations of the Light-House Board.

R. B. Wallace, superintendent of the West Bay City shipyard, is again getting the plant in readiness for building. It is expected that work will be started on three steel vessels about September 10. They will be of one size—each 434 feet long, 50 feet beam and 29 feet depth of hold. Two will be for the Hawgoods, of Cleveland. Several hundred men will find employment.

During the month of August the marine postoffice handled 55,121 pieces of mail. Of this 40,268 pieces were delivered to and 14,864 pieces received from the boats. Money orders issued numbered 62, amounting to \$1,280.45. The total passages during the month were 3,254. The largest number of passages for a single day was on Sunday, August 25, when 175 boats passed.

Mrs. Dennis Lynn, mother of the Lynn Brothers, Port Huron, died last week, aged 71 years. Mrs. Lynn leaves seven sons, well-known in marine circles—James J., George

F. and Dennis, of Port Huron; Edward J., of Cleveland; Michael J., of Bay City; Wm. J., of Mt. Clemens, and Daniel E., of Chicago; and one daughter, Mrs. W. P. Boynton, of Port Huron, all of whom were at her bedside during the last hours.

There has been more than the usual number of groundings in the rivers the past week, but the stranding of the Antrim at the Limekilns was the most serious and delayed navigation until she was lightered. The schooner Andrews also grounded there. The Saxon and consort fetched up on a shoal about one-half mile above Fort Gratiot and right in the fairway. The Grecian landed abreast of the light-ship in Lake Huron. Thick, hazy weather was responsible for several of the groundings.

The United States survey steamer Search reports a shoal with a depth of twenty feet at the present stage of the lake, from which North Manitou light bears N. 29° E. (true), distant 4.4 statute miles. South Manitou light bears N. 88° W. (true), distant 4 statute miles. The crew of the Search also report 19½ feet of water south of Rush shoal can buoy on a gravel shoal from which North Manitou light bears N. 7° W. (true), distant 2.6 statute miles, and South Manitou light bears S. 80° W., distant 6.6 statute miles.

The losses to the insurance companies up to September 1, it is claimed, have eaten up so large a part of the money taken in for insurance for the entire season that the companies go into the fall storms with an exceedingly small margin. While the number of large losses is smaller this season than in previous years, there have been a vast number of groundings, which have proved expensive to the underwriters. Items of \$5,000 to \$10,000 are numerous in the list of losses. The passage through rivers has been the danger spot of the season, and the repair bills for strandings already exceed losses from strandings at all other points.

The big passenger steamers North West and North Land are beginning to have a good deal of trouble in getting to their destination on schedule time. The delay of the North Land last week at Detroit when her firemen quit in Cleveland, caused a great loss of time which the boat is trying to make up. The North West had the same diversion at Cleveland this week, as five oilers and ten firemen left the boat and a wire was sent here to have men in readiness, but firemen for Belleville water-tube boilers are a scarce article and it is a good thing that the season for these boats is nearly over. These Belleville boilers want relays of firemen to jump aboard at each port of call, and here and there between ports.

The report of a few days ago, that the Northern Steamship Co. intends to take the Belleville water-tube boilers out of the North West and North Land this winter, has been confirmed. The Scotch boilers used now on about all of the lake freighters will be substituted. The company does not complain of the inability of the boilers to make steam, but insists that they demand too much attention to be used where firemen are being changed. The Babcock & Wilcox water-tube boilers in the 500-foot boats appear to be doing a little better this season, but they are fired with patent automatic fuelers. The water-tube boilers are used in the navy, but the marine men say that the stokers there know how to handle them, besides it is a different class of work and service, and other conditions are not the same.

Just as an indication of how court decisions are regarded, I asked a prominent marine lawyer what he thought of the circuit court decision a couple of months ago in Port Huron. The facts were about as follows: In November, 1899, C. H. Jarvis, a coal dealer, chartered W. D. Ragan's barge Jupiter for a cargo of coal from Toledo. Upon arrival there, a full cargo could not be obtained, only about 400 tons being put aboard. Upon arrival at Port Huron, Ragan refused to unload the vessel until he had received the freight bill for a full cargo, claiming that Jarvis had contracted to supply a full load. Jarvis denied that the contract was to such effect and tendered the amount due for the actual quantity carried, and replevined the cargo. The case was submitted to the jury, who decided in favor of the shipper's contention, awarding Jarvis a verdict of 6 cents. My legal friend said the verdict showed the rankest incompetence, though the Jupiter deserved it for not employing a lawyer.

BUFFALO'S first elevator, which was erected by Joseph Dart in 1842, says the Grain Dealers' Journal, had storage room for 55,000 bushels and its leg could elevate 1,000 bushels per hour. The failure of this wonderful undertaking was freely predicted, because "Irishmen's backs were after all, the cheapest elevators."

CHICAGO.

Special Correspondence to The Marine Record.

Capt. John H. Blend, for several years harbor master and superintendent of bridges in Milwaukee, died on Wednesday.

The Geo. Green Lumber Co. purchased last week half a million feet of Norway and white pine from an Ashland, Wis., firm.

The steamer Terry, bought recently in New York, has been detained at Montreal for several days for repairs on her boilers. She will reach Chicago by Monday next if all goes well.

The steel built tow barge Manila, consort of the steamer Malietoa, arrived at South Chicago with 7,390 gross tons of iron ore. This beats the record of the William Edenborn, at Conneaut, by eighteen tons.

The Mueller Lumber Co. has libeled the steel steamer E. H. Strong now lying sunk at Munising on a salvage claim of \$20,000. The Strong was valued at \$35,000 when abandoned and picked up derelict on Lake Superior.

The Cleveland Pneumatic Tool Company have opened a Chicago office at 335 Wabash Ave., in charge of H. S. Coyey, where samples of their complete line of chipping, beading, calking hammers, the "Cleveland" long stroke riveting hammers, piston rotary and breast drills may be seen.

The following meteorological observations are furnished by the office of the U. S. Weather Bureau, Chicago, for the week ending Sept. 4: Prevailing wind direction for the week, N. E.; highest velocity, 34, north, Aug. 30; mean temperature for the week, 70°; highest temperature, 84, on 29th; lowest 58, on Aug. 31st.

Capt. Andrew Anderson, who sailed the schooner Cora A. ever since she was built twelve years ago, died at his residence here on Monday. Capt. Anderson was fifty years of age and leaves a family of three boys and two girls. He came ashore on account of sickness when his vessel was in port on her last trip and failed rapidly, but his death was unexpected.

Harry Shuman, a wheelsman, of the steamer City of Milwaukee, refused to obey the orders issued by Capt. Stewart and also used profane language in addressing his superior officer. The captain ordered Shuman locked up in a state-room and when the steamer reached St. Joseph he was taken off the ship under arrest. A local judge sentenced Shuman to pay a fine of \$10 and costs for mutiny.

Capt. Calvin Carr, who retires after a service of 30 years as a vessel agent on the Chicago Board of Trade, will be given a farewell dinner at the Grand Pacific Hotel, Thursday night. Plates for 35 friends of the veteran vesselman will be laid. Capt. Carr retires to a beautiful farm he recently purchased near Oswego, N. Y. It is just a half century since he began sailing, and Oswego was then the proud rival of Buffalo.

The crew of the schooner Driver, abandoned waterlogged off the South Manitou, reached Frankfort in their wooden yawl boat. The craft had a cargo of hardwood lumber and was reported as floating bottom up off Big Point Sable. The schooner was owned by Victor and John Anderson, of Benton Harbor, Mich., and was valued at \$1,200. Her cargo of hardwood lumber was shipped by W. S. Johnson, of Milwaukee, and consigned to C. G. Marsh & Co., Chicago.

In speaking of the great delays and annoyance the Northern Steamship Co. is experiencing with its boats on the Buffalo run, a prominent Chicago marine man said: "The big boats are like a mule. They need just so much coaxing and petting to get any work out of them, and they are getting it, too, in the shape of repairs. The French-Belleville water-tube boilers, with which these ships are equipped, are excellent, but it takes a well-drilled crew to handle them. The boats are, no doubt, well officered, but it is hard to keep a full crew of firemen, and changing them, as they are compelled to do, every trip or two causes much trouble. The boilers are used in the French navy with satisfaction, and I believe it only requires a familiar crew to handle them successfully. In the navy the same men are with them for a long time, and it is reasonable to believe that they know how to handle them." This is considered a fair, true criticism of the conditions under which the North Land and North West have been running for the past several seasons, only, that as the boilers are now getting older, they are becoming so much worse to handle in every way. It is to be hoped that there will be no loss of life or injury to the crew through tubes blowing out, etc. With all this, their success has been phenomenal in the passenger carrying trade this season and equally as good results are expected next year.

CLEVELAND.

Special Correspondence to The Marine Record.

Mr. Harvey C. Beeson, Chicago, publisher of Beeson's Marine Directory visited here this week on his way to Buffalo.

The intent to establish a shipyard at Ashtabula was reported to the City Council this week. A committee was appointed to take the matter in hand.

Harvey D. Goulder, Esq., attended the convention of Weather Bureau officials held in Milwaukee, last week. Commodore Geo. W. Gardner, was also an invited guest.

Capt. Lewis Stone will make a trip with Capt. Norcross and then take charge of the steamer George W. Peavey. Stone was previously mate of the John W. Gates, Capt. Lyons.

I noted last week that the Craig Ship Building Co. would fill the next order for new tonnage. The contract has since been placed for a large steel cargo steamer for next season's delivery.

The rumor is current of a combination of all shipyards under three divisions with central offices in New York. As branch departments, Cleveland would represent the lake yards and San Francisco the Pacific Slope.

The Pittsburg Steamship Co., (United States Steel Corporation), is considering the advisability of issuing a series of instructions to the masters of its vessels regarding the use of oil in quelling rough seas on the lakes. Some of the vessels are already using it.

Mr. D. C. McIntyre, G. F. A., Detroit & Cleveland Navigation Co., is chairman of the committee on the naval parade for the G. A. R. encampment. Mr. McIntyre, with the chairmen of other committees, visited Canton this week and interviewed President McKinley, who promised to review the naval parade when visiting here.

Mr. Walker, assistant in the office of the Weather Bureau, left here on Tuesday morning for Columbus where he will go through a special course of study to fit him for further services in the department. Mr. Walker is a zealous, ambitious young man, thoroughly devoted to study and will undoubtedly make his mark at a later date.

Colonel Jared A. Smith, Corps of Engineers, U. S. A., recently United States Engineer in the Cleveland district, and now stationed at San Francisco, is to relieve Lieutenant Colonel Charles W. Raymond in charge of the Delaware river and harbor improvements. The Colonel has a host of warm friends at the ports within this district.

The committee on aids to navigation of the Lake Carriers' Association purchased the small wooden steamer Kewaunee from James Smith, Chicago, and will convert her into a light-ship for South-east Shoal, Pelee Passage, Lake Erie. The Kewaunee was built last year and valued for insurance purposes at \$13,000, the selling price was \$10,000.

It is a pleasure to meet Mr. George Presley. Carrying his 82 years with the grace of a modern Adonis, he might be one of the active instead of the retired capitalists. Mr. Presley has more than half a century of business life to his credit, as a shipbuilder and drydock proprietor. He built the Cleveland drydock and some of the best wooden bottoms now afloat. There are few can equal Mr. Presley's presence and record, none can possibly surpass or exceed it.

Our weather man must have turned over the keys of the skies to Jupiter Pluvius, while disporting himself in the "Cream City" of the lakes last week. While willing that all Government officials should be condemned to an annual period of relaxation from mental toil and its concomitants, it is the popular belief that the sooner Mr. Kenealy picks up the threads of the web or the warp of the woof, or, however, it is, ruling the weather again, the better we'll like it.

The following meteorological observations are furnished by the office of the United States Weather Bureau, for the week ending September 4th: Prevailing wind direction during the week, south-east; highest velocity, 32 miles, north, on the 31st. Mean temperature for the week, 69; highest temperature, 85 on August 29th; lowest, 58 on September 1st; sunrise and sunset data computed for local time at Cleveland, September 6th, sun rises, 5:30; sets, 6:36; September 9th, sun rises, 5:35; sets, 6:20; September 12th, sun rises, 5:36; sets, 6:15.

The advisability of procuring a dredge for work at Lake Erie ports is being considered by the engineers. Major Dan C. Kingman has written to Major Hanbury, of Detroit, an expert up to date on such matters, to inquire if the operation of such a plant could be carried on successfully. If it is found that it can be and save money, Major Kingman will recommend to the department that a dredge be

purchased for this district. The dredging combine or syndicate of private interests may not relish such a departure, but that is no reason why the people's money should not be handled with economy.

The tightening of the reins over the actions of masters is more noticeable than ever before. It has been mentioned previously, and now comes up as a new order issued by the United States Steel Corporation governing the masters of their vessels. The Lorain Times-Herald says: "It has been the practice of the captains upon arriving at a port near their home to go and see their families while the boat was loading or unloading. For instance, a boat arrives here today and will not be unloaded before to-morrow. The captain lives in Cleveland and he goes home to remain over night. This has been stopped by the Steel Corporation. The new order says that no captain shall leave the port at which the boat is, without a permit from the head office. If a captain wants to make a brief trip to his home, he has now got to get a permit from the manager. The reason given for this order is that when a decision is suddenly made to transfer a boat from one port to another delay is sometimes caused by the absence of the captain."

DULUTH-SUPERIOR.

Special Correspondence to the Marine Record.

The Northwestern Coal Railway has moved its offices from the docks at Allouez to the Berkshire Block at West Superior. The Youghiogeny & Lehigh Coal Co. will also occupy the same offices. Both companies are under the local management of C. P. White.

The John O'Brien Lumber Co. sold this week 4,000,000 feet of Norway and white pine to the White River Lumber Co., Chicago, for \$60,000. The Geo. Green Lumber Co., Chicago, also took 400,000 feet; the stock is at Ashland and Bayfield and will be shipped as early as possible.

The excursion season is about drawing to a close but there is still traffic enough to keep all local boats as busy as they can be. The pickings to be raked together from freights does not leave much "gilt on the gingerbread," still, there seems enough to pay running expenses and p'raps a trifle over.

There is hardly a busier corner on the face of the earth than the head of the lakes presents just at the present, and, beyond a noticeable dropping off in the traveling passenger trade there is every indication that the rush of transportation and commerce will be equally as brisk up to well into November or till a suspicion of frost begins to linger around.

Mayor Parker has signed the ordinance passed by the council granting a franchise to the Black River Falls Company to bring power into West Superior from the falls, situated sixteen miles from the city. The company is expected to get to work at once and will at first develop about 1,200 horse-power from the falls. The system of dams will increase the fall of water over the natural drop in the river.

The refusal of Hon. J. Israel Tarte, Canadian Minister of Public Works, to recommend the offer made by the Wolvin syndicate to erect elevators and transfer houses at Montreal, will probably mean the killing of the entire project unless a new proposition and one more favorable to the ideas of the Canadian government are made. Such measures, however, are not likely to be taken, as the former offer was to create something of nothing by turning trade into unused channels.

Members of the longshoremen's union who are on strike at Calumet and Hecla mine docks at South Lake Linden, are conferring with union officials at other ports, and the men believe they will win out. They demand that the Calumet and Hecla Co. employ only union men to unload at its docks. The company is employing non-unionists, while the sheriff and deputies guard the docks. Should the strike spread to other ports the situation may have a serious effect.

Mr. J. H. Darling, U. S. Assistant Engineer, Office of Corps of Engineers, U. S. A., Duluth, furnishes the following gauge of water levels for Lake Superior: "The stage of Lake Superior in August, 1901, by the U. S. gauge at Houghton, Mich., was 1.47 feet above low water datum. This is 0.12 feet higher than for the preceding month, and this is nearly the normal rise, which is 0.08 feet from July to August. The rainfall at Duluth for August was 1.70 inches, as reported by U. S. Forecast Officer Richardson, which is 1.76 below the normal for August. The stage last month was 0.28 feet higher than in August, 1900, a year ago, and is 0.64 feet higher than the average August stage for a period of 26 years, from 1872 to 1897."

BUFFALO.

Special Correspondence to The Marine Record.

The steamer P. H. Birkhead was libeled here this week by Jacob H. Rumbold and Mary B. Gillie for \$216.68, which they claim is due for boiler repairs.

On her last trip the Western Transit liner Hudson discharged 23,000 barrels of flour, or about 2,300 tons, put on a full load of package freight and sailed same evening on her return up the lakes.

The seven branch yards of the American Ship Building Co. can find room to lay keels for 22 vessels of the usual type and apportioned as follows: Chicago and Lorain, 4 each, Cleveland, Detroit, West Bay City and West Superior, 3 each, Buffalo, 2. Steel shipbuilding is not carried on at the Milwaukee yards.

The September supplement of the Inland Lloyd's Register, Capt. A. B. Drake, manager and chief inspector, adds two steel steamers to the list, the Colonel, 3,978 gross tons, built by the Detroit Ship Building Co. at Wyandotte and owned by McVittie et al., Detroit, valued at \$210,000, and the Lakeside, 285 tons, built by the Craig Ship Building Co., Toledo, and owned by the Sandusky & Islands Transportation Co., Sandusky, O., valued at \$35,000.

A large number of passengers from Chicago reached here on the Puritan, a new steamer owned by the Graham & Morton Transit Co. The Puritan was built by the Craig Ship Building Co., Toledo, this season, going into service on July 1st. She is a model of the excursion boat type, and is licensed to carry 2,000 passengers. It is also claimed that she can show most of the lake craft a clean pair of heels, having a record of twenty-two miles an hour.

In connection with the recent accident to the Brooklyn bridge, the exhibit of the John A. Roebling Sons at the Pan-American Exposition is of interest. A facsimile of the bridge is shown together with specimen pieces of the cables used in the old and New East River, (N. Y.) bridges, the new being nearly half again as large as the old. The whole Roebling exhibit is placed under a most excellent copy of one of the central piers of the old bridge, and forms an interesting view.

The underwriters have not yet decided to accept the steamers Hennepin and Avon as constructive total losses. It is reported that Capt. Davidson has said that he can repair the steamers at a low figure and save the companies from taking them, but there is the insurance clause that obliges the restoration of the vessels to their former condition. They could be repaired cheaply, but that would not meet the requirements. There are people ready to purchase the Avon and Hennepin, but it now looks as though it would take all the season to reach a settlement with the underwriters, and this is quite a usual card to be played in cases where disputes occur. Usually it is best for the owners to hold firmly to the strict reading and rendering of their insurance policies.

W. A. Rogers, John Cunneen, George H. Raymond, Alfred Haines and Theodore S. Fassett left for New York City on Monday to hold a conference with New York business men, including members of the Produce Exchange of that city, on the subject of improvements for the Erie canal. It is hoped some plan of action will be determined upon for submission to the Legislature next winter. At the convention held in Syracuse some time ago favorable action was taken for a 400-ton barge canal, but the New York men insisted on a 1,000-ton barge canal, and nothing came of the convention's efforts. At a State commerce convention to be held in this city about September 15, 500 delegates will be present from the principal cities and towns of the State, and the questions pertaining to canal improvements will receive a thorough discussion.

A statement of the tonnage of the canals for the week ended August 22nd, compared with the tonnage of the corresponding week of last year, as given out by Col. John N. Partridge, Superintendent of Public Works, shows that the increased business on the canals which began with the opening of the season continues. The total tons carried last year was 111,316; that for 1901, 117,325, the increase being 6,009 tons. This increase like that of previous weeks, is made up of through freight East, the through freight West being less by 6,000 tons than for the corresponding week of last year. The actual increase, therefore, to Eastern shipments for the week is nearly 12,000 tons. This increased shipment consists largely of wheat, the total tons being 16,791 as against only 240 tons last year. Other items of increases are boards and scantlings, ice and bituminous coal.

CHICAGO RIVER—A DIFFICULT PROBLEM.

With the fall grain movement which is destined to be heavy and the rush of coal cargoes to stock up for the winter supply, the masters of vessels will need to exercise more than ordinary vigilance when frequenting Chicago.

Those who have not been trading there or visited the port but seldom during the season will, of course, be fully informed regarding the effects of the current through the opening of the Chicago drainage canal. Other features which were brought forward earlier in the season are just of as much moment now, and will obtain to the close of navigation.

It has been said, and without any desire to speak derogatory of the port, that, Chicago river is causing a great load of anxiety to the masters of large modern built craft. It is said, and whether with a desire to brace up the municipal officers or otherwise, we know not, that the laxity of the local administration is almost scandalous in its treatment of floating property; furthermore, marine men have spent time and money trying to encourage at least a step toward making some improvement of the conditions existing, though the city does not show the slightest disposition to respond. Bridges are allowed to fall to pieces, becoming not only a menace to the safety of navigation, but to public safety as well. These decaying structures are seldom—and some of them never have been—repaired until a vessel does inevitable damage to them, and is compelled to pay the full cost of the work done at city prices, which is little short of taking money away from a person with the aid of a sandbag.

Speaking of this an old lake captain who has sailed the lakes for two score of years, and is largely interested in vessel property trading out of Chicago, said recently: "It looks as though the city intends to make vessel owners pay for the improvement of the Chicago river. Bridge piers, and in fact, everything that comes under their jurisdiction that a boat can get near enough to injure, is allowed to fall apart so that the wash of even one of our small tugs passing at an ordinary speed will almost carry them away. We have to settle such bills or quit sailing here; it is shameful but we are powerless to change the conditions. It will be so, I presume, until the center pier bridges are abolished, and I do not think that will be while the present administration is in power. If they intend to do anything for us they are pretty long in beginning, and each year's delay is driving business from Chicago. Owners and masters are bound to favor other ports, and this will show more clearly two or three years hence."

SEPTEMBER ASTRONOMICAL DATA.

Astronomical data for September, 1901, furnished the MARINE RECORD by the Washburn observatory:

The two most brilliant of the planets are now conspicuous in the evening sky. One of these, Venus, is seen in the west in the early evening. Mars may also be seen as a moderately bright and ruddy colored star low in the southwestern sky in the very early evening; and later in the month Mercury, having drawn eastward from the sun, will appear in the same region. The last named planet, however, will not be favorably situated for observation. The other brilliant planet, Jupiter, is on the meridian far south in the early evening. It is followed by the less bright planet Saturn, a little east and north of Jupiter.

The times of sunrise and sunset at Milwaukee for the month are as follows:

	SUNRISE.	SUNSET.
September 1.....	5:15.....	6:28.....
September 11.....	5:26.....	6:10.....
September 21.....	5:37.....	5:52.....
September 30.....	5:47.....	5:36.....

The times of the moon's phases are:

Third quarter.....	September 5.....	7:27 a. m.
New Moon.....	September 12.....	3:18 p. m.
First quarter.....	September 20.....	7:33 p. m.
Full Moon.....	September 27.....	11:36 p. m.

The principal fixed stars visible in the evening hours during the month are: To the west, Arcturus and Vega; near the meridian, Altair; to the east, Regulus.

AN order has been issued by the British Admiralty which will have an important bearing on the quantity of timber consumed in Great Britain. It is to the effect that in the future construction of warships wood is to be used as little as possible. There are to be no wood decks, and the cabins are to be steel, lined with corticine. This regulation is to apply to all ships which are at present being built, which are not too far advanced for the design to be altered by having the wood decks and other parts removed from them.

OUR SHIPYARDS LAUDED.

Prof. Ernest von Halle, special commissioner of the imperial admiralty, after an extended investigation of the shipyards of Great Britain, Germany, France, Holland and the United States, says, in his report to the German government:

"The shipyards of the United States are incomparably equipped for thorough, economical and rapid production. With the enormous expansion of trade, the time is not far distant when there will be shipyards in America at every important ocean and lake point. The time is also not far distant when America will join Germany in occupying the same relation to the world's vessel supply that has been held by England so long. Germany's shipping needs are in excess while heretofore we have been supplied exclusively by English boatbuilders, it is distinctly probable that we will shortly go to the United States whenever there is a deficiency to be filled."

QUEBEC VERSUS MONTREAL.

Mr. William Macpherson, harbor commissioner at the port of Quebec, has addressed a letter to the Toronto Board of Trade, in which he points out that the employment of the largest steamers to make transportation cheap is the only salvation for the lake and river route to Europe. The Minister of Public Works is putting forth the most strenuous efforts to make Montreal a harbor equal to all requirements, but Quebec is by nature the natural port of transshipment for the largest craft that pass through the canals. In the harbor of Quebec the largest steamers afloat can enter and swing at anchor with the greatest comfort. The steamer Great Eastern arrived in Quebec in 1860, and proceeded no

RIPARIAN—LAKE—LOW WATER RIGHTS.

The question of trespassing on land abutting a navigable river and owned by private persons, has long ago been settled to the satisfaction of all interested, or rather, the owners' rights are well known to be unassailable. As regards frontage on the lakes the matter has become the subject of litigation in several States and more notably perhaps in Illinois and Ohio and at the cities of Chicago and Cleveland within those States. The Supreme Court of the United States decided, in the lake front cases at Chicago, that the riparian rights of the Illinois Central Railroad amounted simply to a license to use the water front, that the land under the water belonged to the State of Illinois, and that the license granted by the Legislature of Illinois could be revoked. Relative to the foreshore rights on the sea coast it is generally accepted that the owners rights extend to the limit of low water, although this has also been before the courts, and to the best of our belief, or remembrance, ruled upon adversely in one instance at least by the Pennsylvania courts and distinctly so in the case of ownership to the foreshore as held by other maritime countries.

In numerous localities, where the coast line is low lying and where there is a large rise and fall of the tides an immense acreage is left bare at neap tides, which becomes navigable at full or flood tides, and this expanse of territory is placed specially under the control and jurisdiction of a department of the government.

Appealed to recently regarding the rights of ownership by one of their patrons, the law firm of Messrs. White, Johnson, McCaslin & Cannon, Cleveland, state the law in the case to be as follows:

MONTHLY SHIPBUILDING RETURNS.

TREASURY DEPARTMENT, OFFICE OF THE COMMISSIONER OF NAVIGATION, August 31, 1901.

The Bureau of Navigation reports 142 vessels of 32,210 gross tons were built in the United States and officially numbered during the month of August, 1901, as follows:

	WOOD.				STEEL.				TOTAL.	
	SAIL.		STEAM.		SAIL.		STEAM.		No.	Gross.
	No.	Gross.	No.	Gross.	No.	Gross.	No.	Gross.		
Atlantic and Gulf.....	66	10,941	18	1,437	1	235	2	4,839	87	17,452
Pacific.....	4	1,627	7	1,158	.....	.....	.....	.....	11	2,785
Great Lakes.....	.....	.....	26	1,126	.....	.....	6	9,426	32	10,552
Western Rivers.....	.....	.....	12	1,421	.....	.....	.....	.....	12	1,421
Total.....	70	12,568	63	5,142	1	235	8	14,265	142	32,210

The largest steel steam vessels included in these figures are:

Colonel, 3,879 gross tons, built at Wyandotte, Mich., owned by Michigan Steamship Co. El Dia, 4,613 gross tons, built at Newport News, Va., owned by Southern Pacific Co. George W. Peavey, 4,997 gross tons, built at Cleveland, O., owned by American Ship Building Co.

farther, proving beyond doubt that Quebec is the head of navigation for large tonnage. Such steamers as the Celtic, Oceanic, Deutschland, Ivernia, and Minneapolis could all float in Quebec, and such are the large steamers which in the near future must be employed in St. Lawrence trade.

REMOVING A REEF BY EXPLOSIVES.

The blowing up of Arch Rock in San Francisco harbor is the greatest in the explosion line since the destruction of Hell Gate rocks, New York, by Col. H. L. Abbott, U. S. A., in 1876. Thirty tons of nitro-glycerine were distributed in holes under the great rock and exploded. Photographs and triangulation by Lieut. Col. W. H. Heuer showed that the maximum height reached by the water was 466 feet. In the first Shag Rock explosion the column ascended 981 feet, in the second 1,106 feet. The Call reports that the spectators saw a mountain of tumbling waters, dotted here and there with debris, rising majestically hundreds of feet in the air where an instant before had been a long flat platform shining in the midst of the sunlit, peaceful Strait. The waters had hardly subsided when scores of craft of every description headed for the scene of the upheaval. Pieces of timber were eagerly taken in as souvenirs, while boatmen did a lively business picking up dead fish. For acres and acres the waters were white with foam and strewn with debris. The deep reverberation came across the water to one's ear only after the mountain of water had almost subsided. Its deep rumble gave a new impression of the depth of the disturbance. The tons of rock which were lifted far out of the water could not be so well seen as the scattering fragments of the demolished coffer.

"Owners of lands bordering on the banks of any navigable water are absolute owners of the property extending to the low watermark and as such have absolute and sole control over such property. In addition to this there is annexed a right that is called riparian right, that is to say, a right and an exclusive right to extend or build out a dock to the point where the water becomes navigable.

"There is no question of the ownership of the land underlying the water until one signifies his ownership by building out a dock or other evidence of ownership to the point where the water becomes navigable. The ownership of the beach down to the low water mark is just as absolute as is the right to build a house on land that you own. The United States neither has nor claims any right on the beach above low water mark and between low water mark and the point where low water begins. It claims and asserts no other right than the right to see that navigation is not unduly interfered with. Thus it follows that one has the same legal right to keep trespassers off the beach that one has to keep trespassers off any other portion of his land."

THERE will be a sale of condemned material, etc., at the Navy Yard, New York, on Saturday, September 28. The list includes cutters, dinkies, sailing launches, whaleboats, a punt, four life boats and a life raft, railroad iron, slate, lumber, a typewriter, carpenters' tools, furniture, engines, machinist's tools, old books, pumps, copper wire, old flags, 110,520 pounds of shell, 47,980 pounds of steel, gun carriage, Lee rifles, revolvers, belts, bayonet scabbards, clothing and shoes. There are also in the collection knives, forks, table cloths, napkins, doilies, carpets, butter, flour and coffee, a number of musical instruments and electrical machinery.

LESSONS IN WARSHIP FAILURES.

The reported utter failure of France's latest cruiser, the Jeanne d'Arc, which cost twenty-three million francs, and of the Chateau-Renault, which cost sixteen million, is something remarkable in naval shipbuilding. Each vessel took nearly six years to build, two years more than the contract time. At the steam trials of the Jeanne d'Arc only twenty-four boilers out of her thirty-six could be fired. The heat in the engine room rose to one hundred and forty-nine degrees Fahrenheit. What the heat in the stokeroom was nobody knows, as the stokers were forced to flee for their lives. The vessel re-entered Toulon going at three knots an hour. She will require an entirely new set of boilers. The Chateau-Renault's engines became heated and will be required to be replaced. The estimated expenditure on both vessels is put at several million francs. The Marine Journal directs the attention of France and other foreign governments to American shipyards, where war vessels are constructed that will stand the wear and tear incident to the strenuous business in which they are sometimes engaged.

It would be indeed interesting to see a French warship driven as the Oregon was, at top speed over thousands of miles of sea. What condition she would be in at the finish can be guessed, although fortunately for France, all French ships are not like these two failures. Every navy has its mishaps, and perhaps as much is learned from failures as from successes; that is, those productions which come up to the current standard without displaying any radical advance or improvement on former methods of construction. These are called successes, but perchance less will be learned from them than from some ship which suddenly reveals a weakness that may call attention to the flimsiness of some theory previously considered infallible. From this point of view the sinking of Cowper Coles's turret vessel Captain, with all on board, may be regarded as not a wholly unmitigated misfortune. The French may get more instruction out of these two failures than she might obtain from years of smooth and uninterrupted successes. Warship building is much like the making of human character. Repeated failures often make an originally weaker man stronger than his originally abler rival who, sailing through life on unruffled seas, finds no occasion to test his spirit and proves unequal to the task imposed upon him by a sudden shift in fortune. However, France is paying dearly for her experience and there are probably few nations willing to pay such a price for knowledge. The misfortune of all navies is that no conclusive test of the value of types can be obtained in the shock of battle, and then it is too late to remedy deficiencies. We learned little from our war with Spain, for the reason that the naval contest was too one-sided to subject our Navy to any such strain as will be put upon it in a contest with a well-equipped and well handled navy. Perhaps it might be economy in the end to test some of our conflicting types one against the other, regardless of the immediate expense involved.—Army and Navy Journal.

SAILORS' WRONGS ON THE LAKES.

Government attorneys at Cleveland have decided that the United States authorities have no right to cause the arrest of a member of the crew of a foreign ship for a murderous assault on board a boat in the middle of Lake Erie. The question was brought up when John Smithers, deckhand of the British steamer Paliki, appeared at the United States offices for Cuyahoga district and asked that a warrant be issued for the cook of the steamer, an Italian of the name of Carabbi, who, he said, had attempted to take his life. The Paliki was on a voyage from Cleveland to Ashtabula at the time. The Italian became enraged at a remark of Smithers, so the latter said, and drawing a stiletto, made a lunge at the deckhand, which he avoided, and the thin blade of the knife grazed Smithers' shoulder. The other members of the crew interfered, and after a violent struggle overpowered Carabbi and took the knife away from him, throwing it into the lake. It is said that the cook ran into the galley, and returned almost immediately, brandishing a butcher knife, and renewed his attacks on Smithers. The captain and several of the crew took a hand in the affair, and the cook was placed in irons. Smithers immediately returned to Cleveland, after reaching Ashtabula, to secure a warrant for Carabbi's arrest. The state has jurisdiction over crimes committed within three miles from shore, according to recent decisions, and the United States government can only

take cognizance of offenses committed on boats owned by Americans. The Paliki is of British register, and being outside of the three-mile limit at the time of the assault, it was found that Smithers had no legal redress within the United States, and he must take the matter up within the Dominion of Canada.

This is, of course, all wrong, but it is the facts in the case as they came to the surface recently, and were so ruled upon.

THE WEATHER BUREAU.

If the public could know of the millions in dollars, of money, and the thousands of lives that have been saved by the timely warning of hurricanes and blizzards, there would not be so much flippant criticism of the Weather Bureau service. Prof. Willis L. Moore, Chief of the Weather Bureau, Department of Agriculture, at Washington, says that weather forecasting is not an exact science. "Instrumental measurements are made with precision," he says, "and the observations, therefore, are scientific, but the forecasts are made by imperial reason." And then adds: "I am thoroughly satisfied with the general accuracy of the weather reports, and so are the property interests of the country. The marine and commercial interests are satisfied with our work; and if it were not acceptable to the two committees of Congress, we would not get an annual appropriation of \$1,100,000 to maintain the weather service."

LIQUID FUEL.

Liquid fuel seems not likely to displace coal on warships in the immediate future. In the British navy there has been much opposition to its use, partly because of the difficulty of burning oil without the trailing black smoke, but mainly because there is not a large supply of it available in British territory. In Italy, Germany, France and Russia nearly all of the new ships are equipped for the use of oil fuel. It was demonstrated only recently that dangers following the use of oil fuel are likely to be present. For instance, when the Kaiser Frederick III. went aground a few weeks ago the inrush of water carried the oil from the tanks in the double bottom up into the furnace rooms, where it ignited and introduced a peril that had not been thought of. If such a danger may be presented in this way it is obvious what might occur in battle should the hull of the ship be punctured and leakage caused.

RETIREMENT OF CAPTAIN CALVIN CARR.

The announcement that Captain Calvin Carr is to retire from business and move from Chicago to Oswego calls to mind that thirty years ago Captain Carr was one of the best known among the masters of canal schooners on the lakes. The Syracuse, owned by Latham & Tozer, was the first large schooner he sailed, and the way the Syracuse hustled the other vessels of the fleet is spoken of until this day by men who sailed the lakes for a living. In succession Captain Carr sailed the schooner Southwest, the barkentine Champion, which he brought out new, and the Marengo, one of the crack schooners of her day. This was Captain Carr's last command. Since being a vessel broker and grain speculator he has made two or three fortunes and seen them swept away. He has now amassed a competency sufficient to keep him comfortable all the days he may live and he proposes to settle down near his old home in the town of Scriba and enjoy it. He has purchased the Griffin farm, three miles east of Oswego, N. Y.

BLOWERS—FANS.

Over forty years ago B. F. Sturtevant, of Boston, Mass., established the first blower manufactory in the United States. Within ten years thereafter the necessity of equipping large fans with independent means of driving led to the designing and building of a line of distinctively fan engines. For the succeeding thirty years, through a most varied experience and under the most trying conditions, these engines have been developed to their present perfection. A little over ten years ago the rapid increase in the use of electricity as a motive power opened the way for the electric fan with motor and fan built one for the other. The opportunity was recommended and the B. F. Sturtevant Company (successors to Mr. Sturtevant) immediately established an electrical department, designed a full line of fan motors and thus gave the purchaser an opportunity to choose between an engine-driven and a motor-driven fan.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Authority of Master—Promise of Extra Pay.—A master whose vessel has stranded has no authority to promise the seamen additional pay, on behalf of the insurers, for work done for the saving of the ship and cargo, which it was their imperative duty to do without extra compensation; and such a promise cannot operate as a discharge of the men from the service of the ship, or entitle them to recover as for salvage services. The C. F. Bielman, 108 Fed. Rep. (U. S.) 878.

Salvage—Right to Compensation—Services of Seamen on Behalf of Their Ship and Cargo.—A claim for salvage services can only be preferred by persons who were not bound in their legal duty to render them; and since it is the duty of seamen, in the event of distress or shipwreck, to exert themselves to the utmost to save the vessel, cargo, and stores, they cannot become salvors, unless they have been discharged, or the voyage is terminated by the wreck of the vessel or her absolute abandonment by all, or all except the salvors, without hope or expectation of recovery. The C. F. Bielman, 108 Fed. Rep. (U. S.) 878.

Salvage—Right to Compensation—Forfeiture by Fraudulent Conduct.—The fraudulent conduct of the persons in charge of salvage operations, in attempting to bribe the master of the stranded vessel to agree to an excessive payment, and in delaying the work with a view to magnifying the value of the services, when such fraudulent acts were not participated in nor known to the owners of the vessels engaged in the service, or the men employed, will not work a forfeiture of their right to fair compensation, when the services were successful, and of benefit to the salvaged vessel. The Gov. Ames, 108 Fed. Rep. (U. S.) 969.

Contributory Negligence Causing Collision.—The court considers that the evidence warranted the jury in finding that the death of the plaintiff's intestate was caused by the negligence of the defendant, and, even if the deceased was negligent in getting into the path of the defendant's approaching ferryboat, still that such negligence was not the proximate cause of the collision and death. If the servants of the defendant saw the deceased in the path of the ferryboat, in a place of danger, though he was there negligently, they were bound to use due care to prevent a collision. Conley vs. Maine Cent. R. Co., 49 At. Rep. (Me.) 668.

Shipping—Construction of Charter—Custom of Port.—A custom or usage of the port on which a charter was made may be shown in evidence in a suit to determine the rights of the parties under such charter, where it is silent on the subject to which the custom relates, in order to place the court in the position of the parties when the charter was made; but, to entitle such custom to be read into the charter, there must be no room to doubt its existence, and it must be reasonable, certain, consistent with the contract, and not contrary to law, and so general and long established that the parties are conclusively presumed to have contracted with reference to it. Continental Coal Co. vs. 108 Fed. Rep. (U. S.) 882.

Collision—Mutual Fault.—A propeller bound up the East river came in collision with a car float on the starboard side of a tug going down the river a little above the Brooklyn Bridge. The evidence showed that the tug was carrying proper lights, but neither she nor her lights were seen until the propeller had rounded about directly up river. The propeller gave a signal of one whistle, and then an alarm. She heard no whistles from the tug. The evidence showed that the lights of the propeller were seen from the tug, and a signal of two whistles was given to the propeller before the latter had signaled. Held, that the propeller was in fault for not having observed the lights of the tug earlier, and not having observed her signal of two whistles before its own whistle, and that the tug was to blame for not keeping in the middle of the river, as required by statute, and in having gone to the left under a signal of two whistles without an assenting signal, instead of going to the right, as required by the regulations, and in not repeating her signal at once and reversing. The William E. Ferguson, 108 Fed. Rep. (U. S.) 937.

Unstable Ship.—A steamer was so improperly loaded as to render her topheavy and of slight stability of equilibrium, and to give her a decided list, when she commenced her voyage. During the voyage the list shifted from starboard to port, and back again, although she encountered no weather more severe than should reasonably have been anticipated at that season, and finally became so great that the master put into an intermediate port. While lying at a pier, and while the master was removing cargo from a side port to enable him to load more coal in the lower hold, the ship rolled over, bringing the open port under water, and she filled and sank, damaging her cargo. Held, that, even if the manner of shifting cargo was negligent, and the immediate cause of the disaster, and even if it could be considered a fault in the "management of the ship," within the meaning of the Harter act, yet it was not negligent in itself, but was rendered so only because of the unstable condition of the vessel, which must be considered the essential cause of the damage, and one for which the owner was responsible. The Oneida, 108 Fed. Rep. (U. S.) 886.



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regarded.

CLEVELAND, O., SEPTEMBER 5, 1901.

BRIGADIER-GENERAL WILLIAM LUDLOW, U. S. A., died at
Convent, N. J., on Friday morning last. The general had
many warm friends when he was engineer of the ninth and
eleventh light-house districts on the lakes and proved him-
self invaluable to the lake marine interests.

THE way the Columbia is outfooting the Constitution
looks as if the last conqueror should be named as champion
for the coming event. All hands agree that Shamrock II is
a darling, so to avoid any "slip between the cup and the
lip" the darlinest craft we have should be put alongside of
her. We don't want to make any common error, this time
if ever, or never.

THE thanks of the RECORD are due the Collingwood Ship
Building Co., Limited, Collingwood, Ont., for an invitation,
accompanied by transportation favors, to view the launch of
the steamer Huronic from their yards on Thursday, Septem-
ber 12. As we have a little launch ourselves on that date
it will hardly be possible to attend both, but we may be per-
mitted to mingle with the guests in spirit if not in form
material. Who's to tell?

AS regards the rights to lake frontage it is generally con-
ceded that any one may build lakewards to the extent of his
or their pocket books or bank accounts, even in well settled
localities, and at points adjacent to the more prominent
lake ports the United States survey provides several
hundred feet of a shore line, to all of which riparian rights
extend. Improved water frontage is expensive to make,
though at times of great value when it is permanently im-
proved and protected. Municipal rights to a city owned lake
front also extend to this inner harbor or shore line limit, but
not a foot outside of it unless provided for by special legisla-
tion to that effect. Water works, cribs may be considered a
trespass upon the rights of the Federal domain.

THERE is a thieving air in the atmosphere of China.
Kleptomania is a primal virtue, it is also the Alpha and
Omega of the creed of visitors to the Celestial Empire.
Even the missionaries couldn't keep their hands off, right
or wrong. Loot the heathen Chinese by fair means or foul,
appeared to be the text of a greedily devoured sermon, and
now the Secretary of the United States Legation is bringing
a bulk of Chinese valuables along, sufficient to fill several
railway cars. Well! for once we can holler like the Pharisee
of old, and say thank discipline, our naval sailors were
not like other fellows. There was less loot captured by
sailors than any other invaders. The United States should
make full reparation though, even up to the value of the
last piece of cash.

THE LINE AND ENGINEER OFFICERS.

That is quite a nice laid plan wherein it is arranged that
line officers in the navy should alternate duties with the en-
gineer staff, and vice versa. This was brought about through
the recent passage of the Navy Personnel act, whereby the
exchange of duties should place the officers either in charge
of the bridge or the engine room on a ranking equality, etc.
The Bureau of Steam Engineering and Navigation are at
one with Rear Admiral Melville, U. S. N., in believing that
some means must be taken to educate line officers in the
duties of the engine room, and to accomplish this the engi-
neers must be brought to alternate their services with the
deck officers.

The entire question has been thoroughly threshed out in
the effort to re-establish an adequate naval engineer corps.
No doubt the initial steps now taken will ultimately prove
successful of accomplishment, but hardly, we think, in the
manner mapped out. The bridge officer can practice, read,
study, learn, and then, after a lifetime of experience, he
may not be loaded down to the scuppers with any super-
fluous knowledge, and the same curriculum will not be
found of too great weight for the engine room specialist to
carry. The means now being used to bring about the de-
sired result is perfectly in consonance with the discreet
methods in view for the ultimate harmonizing of both
branches of the naval service, and all this tends, as it natu-
rally and practically should do, towards the more complete
severance of the avocations and the distinctive uplifting of
the engineer corps from every standpoint.

The sailor-mechanician, or men practising the duties of
each, will, we fear, bring about a hybrid production in both
departments. The engineer, to keep pace with the march
of modern mechanism must be alert enough to practically
elucidate the latest theories concerning his vocation, say,
including the science of metallurgy, etc., and to exhibit a
sponginess of mentality capable of absorbing even a glim-
mering ray of probable possibilities coincident with the
scientific and technical features of his professionalism, nor
will any portion of his service life have been misspent if at
the expiration of a long career he can pronounce himself, or
others for him, a competent servant in his walk of life, under
all conditions. So much has been said and written about
the line officers and the deck service, from the man behind
the guns to the officer, we were about to say, concealed inside
the conning tower, that it is popularly considered as an im-
possibility for him to crowd in, or on, tophammer enough to
shatter his underpinning and reverse the order of the laws
of gravitation, even by the most unremitting efforts of a
carefully guarded and prolonged lifetime of theoretical ap-
plication and service experience.

Such importance being awarded to the motive and aux-
iliary power in a warship and it's at least dual manipulators,
the natural sequence is precisely demonstrated in glancing
at a transparent vessel containing the purest and best of oil
and water, each fulfilling the behest of its properties in the
highest possible degree, and in this view, we assume that
the eventual settlement of the naval personnel question will
be ultimately solved, after the present preliminary abortive
attempts at combining opposites proves futile.

It is reported that the shipbuilding firm of the Armstrong-
Whitworth Company, of Newcastle, England, is consider-
ing the feasibility of establishing a shipyard in Canada. It
would be in the neighborhood of Sydney or Halifax. Swan
& Hunter are another shipbuilding firm considering the in-
ducements held out. E. B. Swan, of this firm, has been
visiting Nova Scotia. Mr. Denny of the world known firm
of Denny Bros., Dumbarton, Scotland, has also been spend-
ing some weeks in the Canadian Provinces on a special visit,
but for what reason has not yet developed.

IF 5,000-ton steel steamers loaded with iron ore lay sunk
where the cribs are built on Lake Erie, off Cleveland, the
best modern devices and appliances would be used to keep
anything from running foul of them. Mayor Tom L. John-
son is acting master and owner of the waterworks cribs and it is
his bounden duty to see that they are not damaged, or fur-
nish cause for inflicting damage upon others. Gas and bell
buoys are considered fairly safe aids in marking natural or
artificial obstructions dangerous to commerce and naviga-
tion.

CAPT. F. D. WALKER, of the Revenue Cutter Service, has
been appointed by the Treasury Department to keep the
courses clear of vessels during the forthcoming New York
yacht races.

LAKE FREIGHTS.

Iron ore is still king and all comers are taken at going
rates. The Lake Erie receipts are yet below last season's
although every ton has been sent forward that could be
handled, and it is now a question if the total will exceed
last year's. Detention at discharging ports is accountable
for about a 20 per cent. loss in ore carrying during August.

The coal movement is certainly away behind that of last
year, though less so at the head of the lakes than else-
where. Buffalo is now putting on a spurt. The total ship-
ments of coal for the month of August were 328,437 tons,
compared with 285,469 tons in August, 1900. The season's
shipments to date are 190,000 tons less than those for the
same time last year. But September will prove the liveliest
month in anthracite shipments for the season. The going
rate is 50 cents, Lake Erie to Lake Michigan, and up to 65
cents to minor ports; to the head of the lakes a frozen 35
cent rate still obtains with free chartering.

Grain freights are easy at 1½ cents on wheat Chicago to
Buffalo with heavy shipments on that basis, one million
bushels being placed on Tuesday. Duluth offers 2¼ cents
September loading, with large quantities chartered ahead.
Chicago shippers rather got nipped on late August cargoes,
and there was a rustle for tonnage that has now subsided, a
reduction of ½ cent marks the rush as being over.

The lumber trade is brisk at \$2 50 per M feet to Lake Erie
ports, and a report that \$2.62½ has been paid from Duluth
and Ashland on cargoes to Chicago. With the turn of the
season and the consequent certainty of the approach of fall
storms the rates must advance very soon to the all rail limit
and go, perhaps, a little better.

BRITISH-CANADIAN SHIPYARD.

It is now reported on what seems reliable authority that a
new shipbuilding plant will soon be in working order at
one of the principal ports in Canada.

It is well known that Mr. Hunter, of the firm of Swan &
Hunter, Wallsend-on-Tyne, England, has made many jour-
neys to the lakes and viewed the shipbuilding conditions
from every standpoint, and that he has had adopted in his
English yard many of the best features in use in the ship-
yards of this country.

Mr. Hunter, with other shipbuilders, notably Mr. Denny,
of the firm of Denny Bros, Dumbarton, Scotland, spent
considerable time in Canada this summer and the outcome
now appears to be that the firm of Swan & Hunter will
avail themselves of the opportunity and advantages offered
by the Dominion government for the establishment of a
large modern shipyard, though nothing has leaked out re-
garding the intentions of Denny Bros., who are, if possible,
more prominent in the shipbuilding world than the compet-
ing firm of Swan & Hunter.

A LARGE CANADIAN DREDGE.

The Hon. J. Israel Tarte, Dominion Minister of Public
Works, made a decidedly vigorous speech on Monday, at the
launching from the Polson Ship Yard, Toronto, of the new
suction dredge to be used by the Dominion Government in
the deepening of the St. Lawrence channel below Montreal.

The dredge, it is announced, is the largest hydraulic suction
dredge in the world, and a similar one will be built for work
on the coasts of British Columbia. The large craft was
launched sideways, and Mrs. Polson christened it the
J. Israel Tarte, as it moved on the ways. Mr. Tarte, in a
speech after the launch, made a plea for the establishment
of more Canadian shipbuilding yards. It had been to en-
courage shipbuilding that he had come to Toronto on behalf
of the Government and given the city an order for the
greatest dredge of the sort in the world. He hoped the
capitalists of Toronto would not let the yard remain idle after
it was through with the Government work.

PROVIDENCE, R. I., is the headquarters of the Almy Water
Tube Boiler Co., manufacturers of patent sectional water
tube boilers. This firm has won in the last ten years a fine
reputation. They build their boilers in the best possible
manner, and all are guaranteed to give uniform results,
without regard to size of boiler. In merchant and passenger
vessels these boilers are fast coming in demand, and are
prime favorites on steam yachts. Their reputation has been
honestly earned, and the best evidence of their durability
and working power is the constant increase in the demand
for them. The multitude of orders received have caused
the company to enlarge its plant, that it might meet with
the demands made upon them.

STORING OIL IN RUSSIA.

According to a Russian authority, Russia has a better system of storing oil than this country. He says: "It is a most important thing. We burn nothing but oil in our locomotives, and the immensity of the Russian oil industry is well known. In this country you build a costly tank of heavy boiler iron in which you store your oil. The lower plates, which stand the greatest strain, are of very heavy iron, and they decrease in thickness toward the top, according to the pressure they are required to sustain. It is a costly and foolish idea. We store oil without the necessity of building costly tanks. We store it in water. If there be no natural body of water at hand we make an excavation and fill it with water. In the center of this artificial lake we drive a circular row of piles, from which we suspend a bottomless tank of thin sheet iron. This tank is of the thinnest possible material, and could be made as well of any waterproof fabric. The top is kept a little above the surface of the water. The oil flows from a pipe to the center of the tanked inclosure, and being lighter than water, floats on the top. As the oil flows in the water flows out of the bottom of the tank. It is a very simple arrangement. As the pressure of the water from without is the same as the pressure of the oil from within, the tank has to stand no strain, and can therefore be made of any material that will prevent the seepage of oil. The arrangement has many advantages. The sand and dirt that is pumped out of an oil well and which collects in the bottom of your tanks is a never ending source of trouble. By our arrangement the sand sinks to the bottom of the lake and the oil purifies itself. Again, if a tank of oil gets on fire we can save the oil by pumping it from the bottom. The oil burns only on the surface. When we have drawn all the oil out the flames have nothing to feed on but the surface of the water, and the fire goes out."

EASTERN FREIGHTS.

Messrs. Funch, Edye & Co., New York, report the condition of the Eastern freight market as follows:

In spite of lower prices for our cereals we cannot report the slightest improvement in the demand for grain either on the berth in parcel lots or for full cargoes. What little new business has been accomplished during the current week, has only been possible by the abnormally low rates accepted on the part of some of our regular liners, most of which however, have restricted their bookings to such quantities as had to be taken for ballast or stiffening purposes. The scarcity of general cargo, just now also strongly marked, has forced a great many of our liners to leave with part cargo only whilst it is reported that a large steamer left one of our neighboring ports entirely in ballast probably the wisest proceeding on the part of her owners. Full cargoes, owing to the competition of the berth vessels, appear to be entirely out of the question and such inquiries as have come into the market judging from all appearances are entirely to cover old business entered into by merchants a couple of months ago. The number of boats actively pressing upon our markets preclude the possibility of an early change for the better and cotton being at least two weeks late no assistance can be expected from this commodity for another three or four weeks.

In consequence of the scarcity of all freights, owners have been obliged to turn their attention elsewhere and the principal feature of this week's fixtures is the number of charters effected to the Far East, both for coal and case-oil; but in both cases owners have had to make concessions in the rates to secure the business.

Further charters have also been transacted for coal to the Mediterranean; owners in one or two instances preferring to take cargo on ship's account rather than accept present rates offering for other cargoes. The two charters reported for cotton, from Savannah were made some time ago, but the fixture reported from the Gulf also records a further reduction.

Business in long voyage sailing vessels continues limited and rates are yielding, due doubtless to the general depression in steamer freights, as referred to in our foregoing remarks.

Grain to Liverpool, 1½ cents; London or Glasgow 2 cents.

The Brown Hoisting Machinery Co. has just issued a new and enlarged edition of their illustrated tramrail and trolley circular. It appears that there is a large and increasing demand for these accessories of high class construction which the firm is bent on satisfying. The Brown Hoisting Machinery Co. ranks first in its field.

STRIKES DELAYING CONSTRUCTION.

Strikes among workingmen are delaying the construction of warships considerably. The Union Iron Works, of San Francisco, has contracts for six warships and two submarine torpedo boats. On the battleship Ohio practically nothing has been done since she was launched a few months ago. The machinists were then on strike. The monitor Wyoming, launched in September, is not yet completed. Of the torpedo boat destroyers Preble, Perry and Paul Jones, the two former have been given trial tests in the bay. Changes designed to give greater speed were ordered about the time the machinists struck, but the alterations have not yet been started. The transport Sherman has been at the Union Iron Works more than six months. Other shipbuilding firms also report delays.

LAUNCH OF THE HURONIC.

The large steel steamer Huronic built by the Collingwood Ship Building Co., Collingwood, Ont. to the order of the North West Transportation Co. Ltd., will be launched on Thursday Sept. 12. The Huronic is a steamer of 3,200 tons capacity and the largest steel steamer ever built at a Canadian shipyard.

LETTERS AT DETROIT MARINE POST OFFICE

SEPTEMBER 4th, 1901.

To get any of these letters, addressees or their authorized agents will apply at the general delivery window or write to the postmaster at Detroit, calling for "advertised" matter, giving the date of this list and paying one cent.

Advertised matter is previously held one week awaiting delivery. It is held two weeks before it goes to the Dead Letter Office at Washington, D. C.

- | | |
|---------------------------|------------------------------|
| Adams F. O. | Kaiser Anthony, Brown |
| Allen Geo. F. | Knight Frank W. |
| Anderson Chas., Ionia | King Chas. E., Corona |
| Beaupry J. H., Cadillac | Kelly T. B. |
| Burnell Jno. R., Palmer | Kinnon Albert |
| Brady Ed. A., S. Mitchell | LaRue Stanley |
| Burr Fred., 2, Germania | Light Fred. |
| Butler C. W. | Lawrence Frank J. |
| Boynton Mrs. | Lowry Wm., Pickands |
| Britten Mrs. C. E. | Mason J. R. |
| Barton Wm. | Manning Frank, Wilhelm |
| Bunch Gordon | Murdock Donald, Roby |
| Barks L. | Montell C. W. |
| Brown Lawrence | Merrell Oren |
| Buck Chas. | Marcelo Alex. |
| Cameron D. R., Marina | Mills W. A., Holden |
| Confer C. E. | Mills H. Edmund, Holden |
| Carroll Geo. | Moore Mathew |
| Carpenter S. W. | Morrisson Wm. |
| Carer Ed., Holden | McGlennon Nelson |
| Call Chas. J., Warner | McCallum Wm. G. |
| Clitter Geo. F. | McDonald Peter-2, Pratt |
| Can Chas. | McGuire Agnes |
| Carter Jas., Rhodes | McDonald Archie |
| Dahhauer Ben-2, Sanilac | McPhee Neil |
| Doughty B. E. | McLennon Alex. |
| Douglas E. V., Argo | Nicholas Wm. |
| Davis F. W., Hoyt | Olsen Fred., Yukon |
| Elfron Hans-2, Hutchinson | Osborn Milford |
| Edbergh Chas. G. | Price Jno. |
| Elliott Jno. W. | Pratt Will. |
| Elden Otto | Parrow Charlie |
| Elliott Thos. | Rose Albert-2, Hiawatha |
| English Jno. | Strassberger Jno.-2, Roches- |
| Elliott Wm. | Shields Chas. A. (ter |
| Farrell Patrick-2 Pratt | Snyder Mrs. Ed. |
| Forsyth Alex. | Smith Edw.-2 |
| Finnegen J. J. | Shelton Frank, Hurlbut |
| Goodwin C., Pathfinder | Schrant E. A. |
| " C. L. | Seipes Wm. |
| Gerrie E. A. | Shooll Geo. W. |
| Gowing Fred. | Santay Jno. |
| Hart Edw., America | Simons Chas. |
| High, Miss M. Jella | Tobin Clyde |
| Hawkins Frank | Thomas Mrs. W. H. |
| Hickey D. | Wilde J. G., Nicholas |
| Jewett Frank, Rees | Weirs Howard, Favorite |
| Jackson Art, Greene | Williams Marshall B. |
| " Alex., 202 | Weber Jno. |
| Jenks C. M. | Young Jno.-2, Armor |
| Johnson Frank | F. B. DICKERSON, P. M. |

The steamer Francis E. Spinner, which was sunk in St. Mary's river last October, by the steamer H. D. Coffinberry, has been thoroughly rebuilt at Burger & Burger's shipyard, and will enter into service as a lumber carrier this week. In addition to the repair of the collision damage, her bow and stern have been rebuilt and she has been given new deck beams and deck and new boiler. The improvements represent an outlay of nearly \$30,000 it is claimed. Capt. Wm. E. Franklin will command the Spinner.

FLOTSAM, JETSAM AND LAGAN.

The Secretary of the Navy has issued an order placing the repairing of all ships under the Bureau of Construction and Repair. Heretofore the work of repairing vessels has been divided among the various bureaus, and the practice led to considerable confusion.

A Pretty Bad Spell.—A young lady of very extraordinary capacity lately addressed the following to her cousin: "We is all well, and mother's got his Terrix, brother Tom is got the Hupin Kaugh, and sister Ann has got a babee, and I hope these few lines will find you the same. Rite sune. Your aphectionate kuzzen."—The Lumber Trade Journal.

The jury in the case of Peter Myszewski, of Manitowoc, who sued the Pere Marquette Railroad Co. for \$15,000 damages on account of injuries sustained by falling through a forward hatch in March, 1900, while loading grain, brought in a verdict against the company for \$4,200. The jury held that the officials of the boat were negligent in leaving the hatch open. It is probable that an appeal will be taken by the company.

The well-known Lidgerwood-Miller Marine Cable Co. have a contract with the Russian government to instal their famous coal transfer device on the warship Retvizan. By means of this skillfully constructed apparatus, coal, provisions and supplies can be loaded from colliers and transports at sea at a rate of forty tons or more an hour. This device is attracting considerable attention from the naval authorities of various nations.

With the Evans-Chandler row and the Sampson-Schley controversy dinning in our ears, are we quite as enthusiastic as we were for an increase in the navy? How much more gratefully dignified than all this squabbling is the calm of those who were with "the galleons of Spain" now everlastingly in the vocative! The country owes a bitter grudge to those who have made the sea service ridiculous by their bigotry, jealousy, meanness and lack of personal poise. There are too many sea-lawyers in our navy, and they should be muzzled at once.—St. Louis Mirror.

Concerning the submergence of Steamboat Island, Apostle group, Lake Superior, Sam S. Fifield, of the steamer Stella, whose summer camping grounds are within sight of Steamboat Island, says that Little Steamboat Island was washed away three years ago. Little Steamboat was nothing but a clay bank which washed away in a heavy storm. Steamboat Island proper is composed of brown stone, and it has not washed away, and shows no signs of disintegration beyond the ordinary wear and tear of any ordinary island.

"No sah," said Col. Bludde, of Kentucky, "the government, sah, is adoptin' entially th' wrong co'se with the Filipinos. What it should do, sah, is to send a shipload of Gawgia watahmelons, an' a shipload of Kentucky co'n whisky, an' a shipload of mint ovah thaih, an' assuah the natives that melon, mint julep an' manifest destiny are synonymous, simultaneous an' one an' the same, sah, an' every one o' these insurgents would drop his gun and come into th' fold. Yes, sah!"—Baltimore American.

The steamer Morse, having in tow the barges Maida and Nasmyth passed the locks at the "Soo" last Thursday, carrying 19,152 tons of iron ore. The Morse carried 7,056 tons; the Maida, 5,824 tons; and the Nasmyth, 6,372 tons. This is not a record-maker, as the Houghton and three consorts carried a greater quantity through the locks, but it shows remarkably large dead weight cargoes to swing on a tow line. It is of course generally known that the vessels owned by the Pittsburg Steamship Co., (United States Steel Corporation), use flexible steel wire tow lines and steam towing machines.

The screw steel steamer Huronic which is being built by the Collingwood Ship Building and Dry Dock Co., Collingwood, Ont., for the Northwest Transportation Co., is to run from Windsor or Sarnia to Duluth via Mackinac, Sault Ste. Marie, Port Arthur and Fort William. It is expected that she will make 15½ miles an hour loaded and 17½ miles when running light. She will have the highest rating, A1 with a star for 20 years, in Bureau Veritas register. She is built of open hearth steel throughout and is of the following dimensions: 325 ft. over all; 308 ft. between perpendiculars; 43 ft. beam, and 27 ft. molded depth. The steamer has moderately fine ends and large water ballast capacity. Engines are of the triple expansion type, 26, 42 and 70 by 42 in. stroke, steam will be supplied by four Scotch boilers, 12 ft. long, at a pressure of 175 pounds per square inch. She will have cabin accommodation for 200 saloon passengers, together with large provisions for the carrying of steerage passengers, as there is a double tier of cabins.



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THE COPPER MINING INDUSTRY.

A report is soon to be issued by the Geological Survey on the copper mining and smelting industry of the United States in 1900. The industry, the report says, was exceedingly prosperous during the year. Values remained at a relatively high level, and while some of the great producers, through a variety of specific causes, did not contribute as much metal as in former years others largely increased their output. There was very great activity in the opening of old mines and the development of new properties, but only a few reached the productive stage in 1900. One by one, the report says, they will appear as sellers in the copper market in 1901 and 1902.

The report contains figures showing the great strides made in the mining of copper since its inception as an industry in the United States. In 1845 the total output of the entire country was only 100 tons, in 1850 it was 650 tons; in 1869 12,500 tons and in 1880, 27,000. Since 1880 Montana and Arizona entered into the field, and the yearly output has increased by leaps and bounds. In 1883 the output was 51,374 tons, in 1890, 115,966 tons, and in 1900 the gross total tonnage of mined copper was 270,588 tons. In the comparatively early stage of the copper industry, that is prior to 1880, when the new fields in Montana and Arizona began to make themselves important factors in the output of the United States, by far the greatest percentage of the total output came from the Lake Superior region. In 1849 the percentage of the Lake Superior product of the total output was 96; in 1850, 88; in 1869, 95.1, and in 1880, 82.2. With the discovery of the Montana and Arizona mines, however, the percentage of the total product of the copper mines in the Lake Superior region began to decrease. It was 20.07 in 1883, 13.4 in 1890, and 19.5 in 1900.

The exports of copper from the United States have steadily increased during the last few years. In 1893, 80,302 tons of fine copper were exported; in 1896, 125,605 tons, in 1898, 145,115 tons, and in 1900, 160,082 tons. The heaviest exports took place in the first half of 1900, when 90,743 long tons were shipped. The product of Montana in 1900 broke all records, being 770,738,439 pounds, while in Arizona there was a slight falling off.

SKILLFUL THOUGH RISKY PILOTAGE.

In view of the risks taken in the alternating canal and river piloting to reach the coast via the St. Lawrence river, it is quite probable that the high rates of insurance required by underwriters are fairly compatible with the risks accepted by the assurer.

The following experience gives an inkling of what may take place at almost any time outside of the several canals and during the alternating reaches in the river.

"The steamer Northwestern, of Chicago, while on her trip down the river had a slight accident opposite Cardinal, which might have proved very serious. After leaving the lift lock and nearing this part of the river the rudder chain broke, rendering the large vessel helpless. The pilot with presence of mind, ran her for shore on this side, at the same time throwing anchor; this was the means of stopping her a little way above the shoal, on which some barges were stranded about three months ago. The necessary repairs were soon made, and the great boat was run up against the current for a short distance and brought around into the channel with as much ease as though she had been a small yacht. Pilot

Delaney, who was in charge, deserves great credit, first, for keeping the boat off the shoal; and secondly, for getting her so safely into the channel again. All who saw her helplessly drifting in the current thought that she was doomed to a more serious accident than she had less than a mile from here at Sparrowhawk Point on her last trip down the river."

The foregoing is by no means a proper risk or a situation to place valuable oversea tonnage in. It is small wonder, therefore, that experienced underwriters demand high rates, and it is needless to say that inexperienced underwriters are, as a consequence, an unknown quantity.

TO IMPROVE HAY LAKE CHANNEL.

Contracts for widening and improving Hay Lake channel in the St. Mary's river, were awarded Saturday by Col. Ly-decker, of the United States Engineer Corps at Detroit.

The cost of the work will aggregate \$500,000.

The Hay Lake channel will be widened from the upper end down for a distance of 21,000 feet, and the total amount of excavation that is to be done reaches 2,742,250 cubic yards.

The work is in three sections, the first being hard pan and gravel; the second in clay and gravel, and the third in sand, clay and gravel.

Hickler Bros., of the Soo, were awarded the first contract, with a bid of 56 cents per cubic yard, which means for them a job costing \$155,456.

S. O. Dixon, of Milwaukee, took the second section, on a bid of 11.4 cents, making the contract worth \$175,340.

Hingston & Wood got the last section at 15½ cents, making the contract worth \$142,434.

The work must be done in two years, and when completed will make a channel sufficiently wide to prevent a recurrence of the Douglas Houghton trouble two years ago.

THE BELLVILLE TYPE BOILERS.

Owing to the continued trouble which the twin screw exclusively passenger steamers North West and North Land are having with their Belleville batteries of tubulous boilers, attention has been directed on the lakes particularly to this form of steam generator.

It appears that foreign warships also experience anything but smooth sailing when shipmates with these boilers, as witness the following from the Liverpool Journal of Commerce, of August 21st.

The Pall Mall Gazette, London, says news of a serious nature comes from Hong Kong, about the first-class battleship Glory. The Glory is the flagship of Vice-Admiral Bridge, the Commander-in-Chief of the China fleet, and is the newest warship in far East. Already her Belleville boilers are giving trouble. When the last mail left six of them were disabled, and all of the boilermakers in the fleet had been sent to the Glory to endeavor to stop the leaks in her condensers and boilers. It was estimated that the ship would be helpless for three weeks.

THE Counselman steamers, known as the Northwestern Steamship Co., now on the lakes and to arrive, will not return to the Atlantic until late in the fall. The Northeastern is under charter for two trips with ore, and the Northtown will also enter the ore or grain trade. As they are built and equipped for salt water service they will be sent to trade on the coast in the fall.

NOTES.

THE Supreme Court in the United States held, in the recent case of The Barnstable, that liability for damages caused by negligence of the officers and crew of a vessel who are appointed and paid by charterers is not as between the charterers and the owners imposed upon the owners by a clause of the charter party requiring the owners to "pay for the insurance on the vessel." The court said in conclusion that in its opinion: If anything more were intended by the insurance clause than to impose on the owners the duty of paying the premiums it was fully satisfied by an ordinary policy of insurance against perils of the sea; that such policy would not cover damage done to another vessel by a collision with the vessel insured, and that the primary liability of such damage rested upon the charterers and not upon the owners."

THE Standard Automatic Releasing Hook Co., State St., New York, manufacture one of the most effective and ingenious devices ever invented for use on vessels. It is nothing less than an automatic releasing hook, which will detach a boat instantly. With this device many thousands of lives are saved annually, therefore it has been adopted by the government departmental tonnage and passenger lines, and is to be found on many large and small merchant vessels. The falls are so rove that both ends of the boat, as it hangs on the davits, detach irrespective of which end strikes the water first. In the roughest sea or under speed, the boat is released the moment it touches the water, and at the same time it can be hooked on, as readily and without difficulty. Further particulars and testimonials will be gladly furnished to the company.

EVERY conceivable specialty that goes into a ship, that can be made of iron, is manufactured by the Newhall Chain Forge & Iron Co., Cortlandt St., New York. A few of their specialties are stud link yacht and ship cables, anchors, blocks, bunker plates, capstans, windlass, pumps, "Warwick" ship driving iron, hand made ship spikes, clinch rings, screw bolts, davits, shackles, swivels and other forgings. Using their own iron and having their own galvanizing plant, all goods manufactured by this concern are of the highest standard. All chains are tested to the Admiralty standard and certificates furnished, which for strength and durability is the best guarantee. Cable chains are now being made at their Lebanon, Pa., works for the two largest steel steamers ever built in the United States, and under construction to the order of the Great Northern Ry. Co., J. J. Hill, president, for the trans-Pacific trade.

THE Chicago-Manchester line was doomed to financial loss from the very start. The exigencies of canal navigation compelled the employment of steamers far too small to compete profitably in these days, when the effort is to build the largest freight carriers possible. It was an endeavor to override the traffic experience of the century. Then there was the loss of time incident to a canal voyage and to taking on of the cargo partly at Chicago and partly at Montreal, the slower trip across the Atlantic, and the difficulty of securing return freight. To these was added the heavy insurance rate, not because of the dangers of the St. Lawrence route between Quebec and the sea, but because of the lake, river and canal transit. The underwriters felt that the boats were too large for the canals and too small for the ocean. The effort to make inland cities into ocean ports is an expensive one, and Chicago is no exception to the rule.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising or setting will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing given for the nearest latitude, as the change in declination for a few hours makes, but a slight difference in the true bearing of the sun's setting. The bearing may be taken when the sun's center is on the horizon, rising or setting. The elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation, or the total difference between compass and true, or geographical bearings.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 5...	E. 9° N. = N. 7¼ E. = E. ¾ N.		
Sept. 8...	E. 8° N. = N. 7¼ E. = E. ¾ N.		
Sept. 13...	E. 5° N. = N. 7½ E. = E. ½ N.		

LAKE ONTARIO, S. END HURON AND CENTRAL PORTION LAKE MICHIGAN, LAT. 44° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 5...	E. 8° N. = N. 7¼ E. = E. ¾ N.		
Sept. 8...	E. 8° N. = N. 7¼ E. = E. ¾ N.		
Sept. 13...	E. 6° N. = N. 7½ E. = E. ½ N.		

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 5...	E. 10° N. = N. 7½ E. = E. ¾ N.		
Sept. 8...	E. 9° N. = N. 7¼ E. = E. ¾ N.		
Sept. 13...	E. 6° N. = N. 7½ E. = E. ½ N.		

LAKE SUPERIOR, LAT. 48° N.

Date.	Amplitude.	Bearing P'ts.	Bearing Comp.
Sept. 5...	E. 11° N. = N. 7 E. = E. by N.		
Sept. 8...	E. 9° N. = N. 7¼ E. = E. ¾ N.		
Sept. 13...	E. 6° N. = N. 7½ E. = E. ½ N.		

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly; if to the left, the deviation is westerly.

THE NEW ORE-SHIPPING PORT.

The following information relating to the Michipicoten harbor, Lake Superior, has been received from the general manager of the Algoma Central Railway Company.

Four steamers, each drawing seventeen feet six inches of water, moved thirty cargoes of ore from the dock last season without any difficulty. The Canadian government has arranged to build a light-house this year on Gros Cap point. A small light will be maintained on Gros Cap point from the opening of navigation until the light-house is erected. The railway company will maintain, also, a floating light to mark a shoal on the western side of the harbor entrance. According to the chart furnished, a light is now shown on the western of the two islands at the eastern side of entrance to the harbor. A light is also shown at the southeast corner of the freight shed on the outer end of the commercial pier.

Throughout the present season of navigation the Algoma Central Railway Company will exhibit a fixed white light on Mamainse point, in Rousseau's house or on one of his buildings. This point is called Coppermine point, the name Mamainse being given to the point to the northward, thus reversing the positions of the two points as named by the Canadian authorities.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—MINNESOTA.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., August 28, 1901.

DULUTH RANGE LIGHT STATION.—Notice is hereby given that, on or about September 1, 1901, the following described range lights and fog signal will be established on the new south pier at the entrance to Duluth Harbor from Lake Superior:

FRONT LIGHT.—A fixed red light of the fourth order, 44 feet above lake level, on a buff-colored brick tower, surmounted by a black gallery deck and lantern, attached to a small fog signal house with a red roof, on the outer end of the new south pier, from which will be sounded, during thick or foggy weather, a 10-inch steam whistle having the same characteristic as the present temporary signal, viz., blasts of 5 seconds' duration separated by silent intervals of 30 seconds, thus:

Blast	Silent	Blast	Silent
5 sec.	interval	5 sec.	interval
30 sec.	30 sec.	30 sec.	30 sec.

REAR LIGHT.—A fixed red light varied by a red flash every 10 seconds, of the fourth order, 69 feet above lake level, on a white, square, pyramidal tower surrounding a white cylinder, surmounted by a white cylindrical watch room and black lantern, near the inner end of the new south pier, 1,188 feet S. 60° 20' W (SW. by W. ¾ W.) in rear of the front light.

On the same date the present temporary range lights and fog signal will be discontinued.

By order of the Light-house Board:

N. H. FARQUHAR,
Rear-Admiral, U. S. Navy, Chairman.

DOMINION OF CANADA—ONTARIO.

INCREASE IN POWER OF WIARTON LIGHT.—An anchor lens lantern, showing a fixed red seventh order dioptric light, is now used at Wiarton light station, near outer end of breakwater, head of Colpoy bay, Georgian Bay, replacing the lantern with pressed glass lens previously used. In other respects the light is unchanged.

GODERICH HARBOR DREDGED CHANNEL: ERRATUM.—The entrance between the two breakwater piers, protecting the channel leading into Goderich harbor, Lake Huron, bears S. 77° E. magnetic, and not N. 71° 15' E., as stated in Notice to mariners No. 36 of 1901.

THORNBURY RANGE LIGHTS.—The light heretofore maintained on the outer end of the west breakwater pier at Thornbury, Nottawasaga bay, Georgian bay, shown from a lantern hoisted on a mast, has been removed to the east side of the pier or wharf, and now forms the front light of a range.

The light is, as heretofore, fixed white, shown from a 7th order dioptric lens lantern hoisted on a mast, and elevated 32 feet above high water mark. It should be visible 7 miles from all points of approach by water. Lat. N. 48° 34' 10". Long. W. 80° 27' 10". The mast has a wooden shed painted drab at its base, and is 25 feet high from deck of pier to top of mast.

The back light is a fixed white light, shown from a pressed lens lantern, hoisted on a mast standing on the Government reserve for harbor purposes, on the west side of Beaver river, in the town of Thornbury, at a point 376 feet S. by W. ½ W. from the front range light above described.

The light is elevated 36 feet above the level of the bay, and should be visible 7 miles in the line of range. The mast has a wooden shed, painted drab at its base, and is 29 feet high from the ground to the top of the mast.

The two lights in one bearing S. by W. ½ W. lead in through the centre of the dredged channel to the entrance between the breakwater piers.

This notice affects Admiralty charts Nos. 327 and 678; Georgian Bay and north channel pilot, 1899, page 351; and the substance of it should be entered in the Canadian list of lights and fog signals, 1901, under the Nos. 1289 and 1290.

RONDEAU FRONT RANGE LIGHT-HOUSE.—The front range light-house tower at Rondeau, Lake Erie, which was moved 100 feet inwards to permit of repairs being made to the outer end of the pier, was replaced in its former position, on the outer end of the east breakwater pier, on the 1st August, 1901.

F. GOURDEAU,
Deputy Minister of Marine and Fisheries,
Department of Marine and Fisheries,
Ottawa, Canada, 16th August, 1901.

All bearings, unless otherwise noted, are magnetic and are given from seaward, miles are nautical miles, heights are above high water, and all depths are at mean low water.

Pilots, masters, or others interested are earnestly requested to send information of dangers, changes in aids to navigation, notice of new shoals or channels, errors in publications, or any other facts affecting the navigation of Canadian waters to the Chief Engineer, Department of Marine and Fisheries, Ottawa, Canada.

ENLARGE THE WEITZEL LOCK.

The attention of all interests was directed to the importance of enlarging the Weitzel lock at the time of the accident which happened to the lower gates of the Poe lock several weeks ago, when the steamer W. R. Linn banged into them. The casualty was occasioned by an alleged mistake of the engineer. The captain ordered the engineer to stop and reverse, and the latter thought he was doing so when the crash came. The gates were all but carried away.

A similar accident is liable at almost any time, and, if the gates give way, would result in the closing down of the American canal for an indefinite period. The wonder of it is that an accident of this character has not occurred before this.

Of course there is the Canadian canal to fall back upon, but it could hardly be depended on to take care of the commerce adequately. It is reported that so far this season over a score of craft grounded at the entrance to the Canadian canal, because of the channel, and for this reason the larger class of carriers are chary of locking through the Canadian gateway.

The vesselmen are keenly alive to the situation, and it is said the Lake Carriers' Association will, at its next annual meeting, arrange to forcibly present to congress the urgency for immediate action for the enlargement of the Weitzel lock.

Plans were prepared last year for this undertaking by the United States engineer corps, and the river and harbor bill contained an appropriation for the work, but it was killed with the bill.

THE Newport News Shipbuilding Co. has informed the Navy Department that the battleship Illinois will be delivered to the government at the company's yard on Sept. 10. Capt. George H. Converse is to be her commanding officer, and her crew is now being assembled on the receiving ship Franklin and at the Norfolk Navy Yard.



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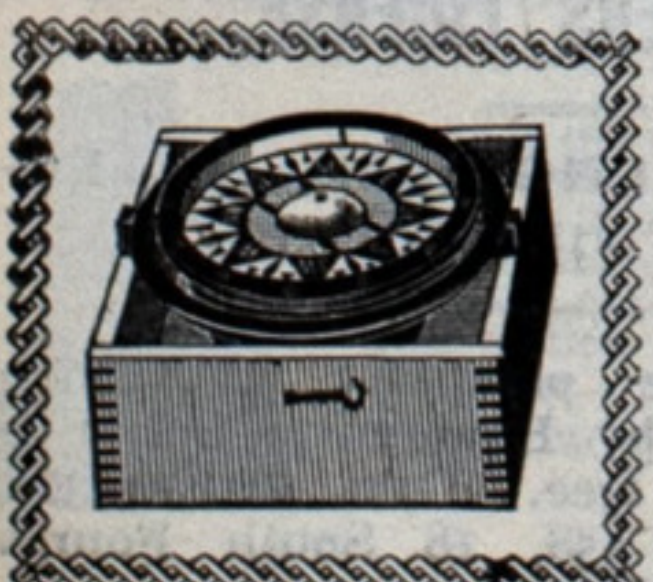
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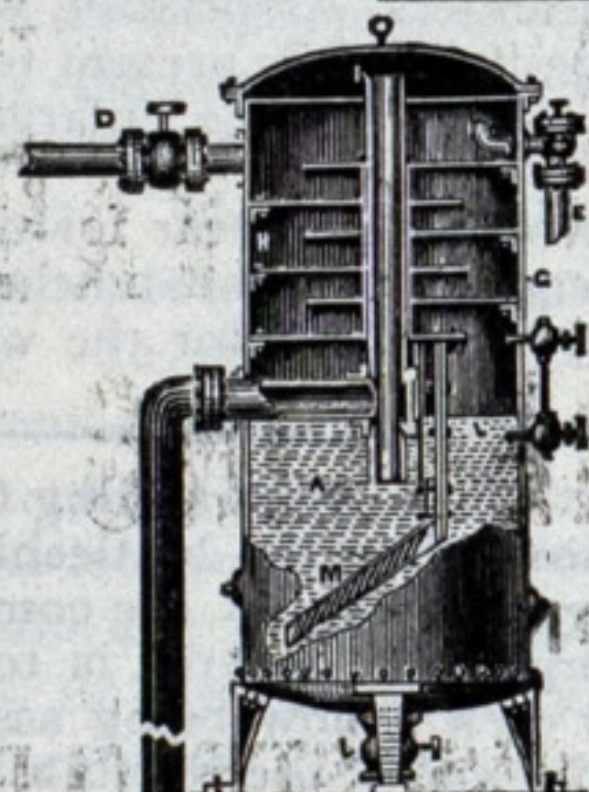
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American Steel Barge Co.'s steamer Alex.
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Lake Michigan & Lake Superior Trans-
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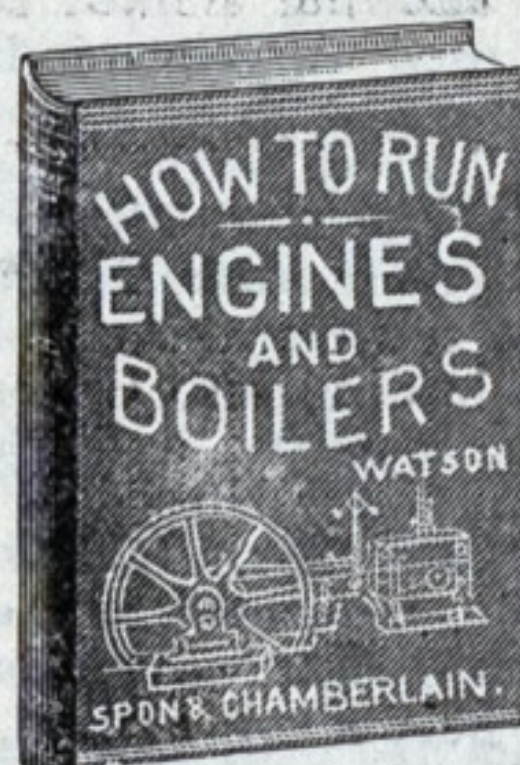
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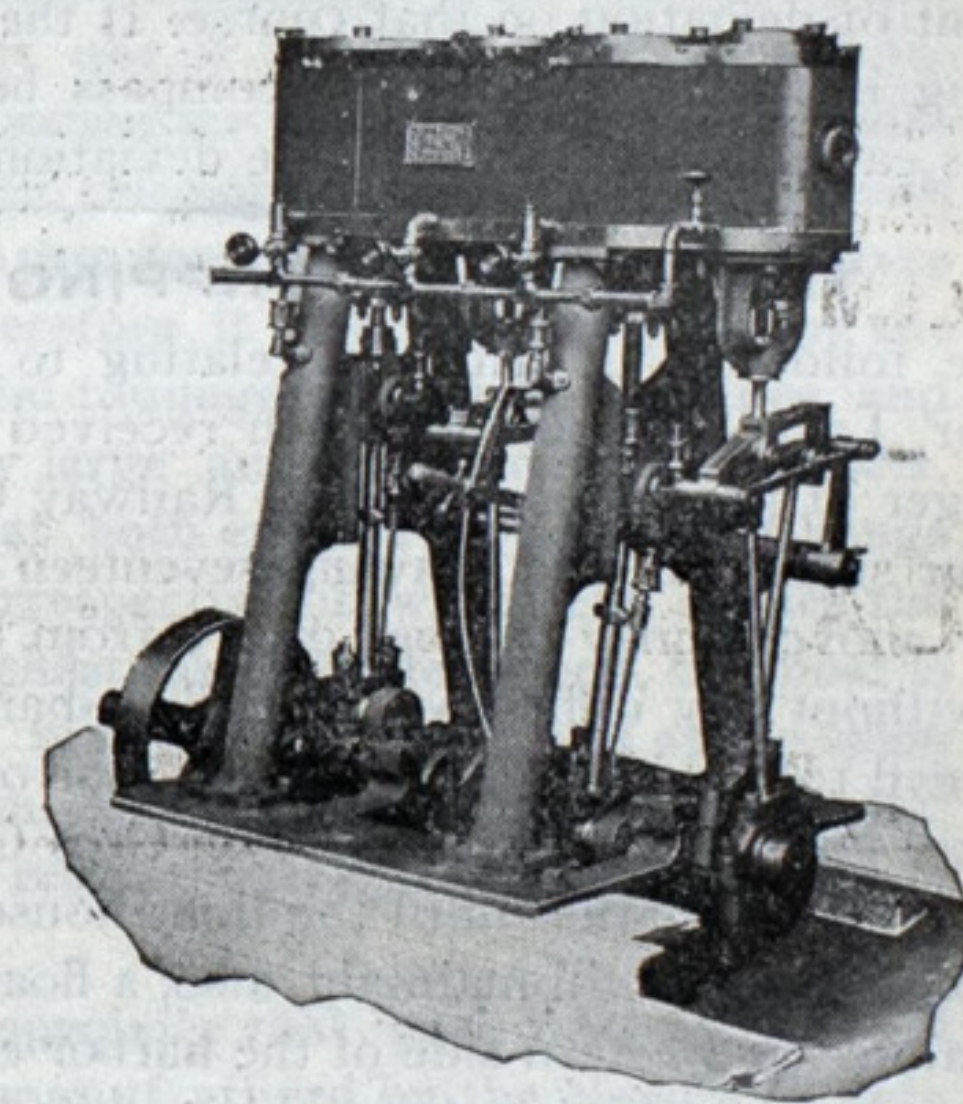
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REPORTED BY THE LOOKOUT.

The following meteorological observations are furnished by the office of the United States Weather Bureau, Buffalo, for the week ending September 4th: Prevailing wind directions for the week, N. E.—S. W.; highest velocity, 32 miles west, August 30th. Mean temperature for the week, 78°; highest temperature, 82 on August 29th; lowest, 62 on September 2nd.

The underwriters, it is understood, have finally decided to accept the abandonment of the steamer Nebraska as a constructive total loss and pay risks to the amount of \$25,000 which they held upon her. This, with the probable acceptance of the steamer Hennepin as a constructive total loss also, will relieve the estate of the late William E. Fitzgerald from the embarrassment of suits to recover insurance money on the steamers. Sealed proposals for the chase of the boats will no doubt soon be invited by the underwriters.

An American author, who has interested himself a good deal in the history of Drake and his times, wrote to our Admiralty to suggest that a certain new battleship should bear the name of the distinguished admiral in question. In due time he received an acknowledgment of his letter, with an intimation that their lordships regretted not being able to comply with the suggestion, and that it would be contrary to precedent to name a first-class battleship after a bird.—Liverpool Journal of Commerce.

It is reported that at least seven revenue cutters will act as patrol boats to keep a clear course during the international yacht races off Sandy Hook. Capt. Walker will command the fleet. Speaking of the present day challengers and defenders, Capt. Shoemaker, Chief of the Revenue Cutter Service, says: "The yachts now are absolutely good for nothing but racing. They are just platforms made to carry sail. They are of no use for pleasure, no use for

sea voyages, no use for anything except racing. When the American yachtsmen first won the cup, they did it with boats of some account."

Next season the Milwaukee district, to which the Lake Superior district belongs will have a new cutter, much larger and finer than the Morrill. The new craft is being built at Richmond, Vt., by the Trigg Ship Building Co., and has been named the Mackinac. The boat will be 288 tons, 190 feet in length, with a beam of 26 feet, modern in every detail, speedy, and will resemble the naval dispatch boats. One innovation will be the flush deck, a style seldom seen on lake vessels. No houses, except the fore-castle and the pilot house, will appear above the deck line. The men and petty officers will have sumptuous quarters, much better than are now provided on any of the cutters.

Some strange individual notions pervade the "hurly burly" of lake crews. In many instances, prominent, well known men are supposed to control anything and everything affecting the lakes. A captain in the employ of Mitchell & Co. was passing up the Detroit river recently, when a scow in charge of a French Canadian slowly reaching across, hailed him and ordered him to slow down and stop. Seeing that the scow would drop several lengths in his wake he of course went on, amid a volley of the choicest "pidgin" English that ever emitted, winding up the dire threat that Harvey D. Goulder, Esq., would be duly notified of such conduct, and then "ze dam neck be wring of off vous zee," needless to say that Mr. Goulder is an admiralty lawyer and counsel of the Lake Carriers' Association. Another instance where public reputation carried a degree of authority occurred this week, when Capt. Geo. P. McKay, treasurer of the Lake Carriers' Association, was requested to kindly discontinue sending the MARINE RECORD on the date subscription expires and that he would "please be so kind as to see to it."

BOILER TESTS.

The British Admiralty issued a highly technical record of the boiler-testing race between the cruiser Hyacinth, fitted with water tube boilers, and the cruiser Minerva, having cylindrical, or Scotch boilers. Rear Admiral Sir William Domville, chairman of the boiler committee, "refrains from expressing any opinion," but points out that the Hyacinth's coal consumption was 550 tons and that the Minerva's was 451 tons. The maximum horse-power developed during a certain two hours' run was 8,700 for the Minerva and 10,000 for the Hyacinth, without the latter perceptibly gaining on the Minerva. The radius of action, so far as coal was concerned, at 7,000 horse-power, was for the Hyacinth 2,930 and for the Minerva 3,000 miles.

NOTICE TO MARINERS.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 11TH DISTRICT,
DETROIT, MICH., Sept. 3, 1901.

St. Louis and Superior Bays, Minn. and Wis.—Notice is hereby given that the pile structure of the Ohio Central Coal Dock Post Light has been reconstructed and the light exhibited.

By authority of the Light-House Board.
J. C. WILSON, Commander, U. S. N.,
Inspector 11th District.

LIGHT-HOUSE ESTABLISHMENT,
OFFICE OF THE LIGHT-HOUSE INSPECTOR, 9TH DISTRICT,
CHICAGO, ILL., Sept. 4, 1901.

Big Bay de Noc Shoal Buoy.—Notice is hereby given that a black spar buoy, thirty feet long, was established September 2, 1901, in 21 feet of water on the southerly end of a shoal making out from the mainland, in the northerly end of Big Bay de Noc, Michigan.

By authority of the Light-House Board.
F. M. SYMONDS, Commander, U. S. N.,
Inspector 9th L. H. District.

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For further particulars see
"Passenger Lines on the Lakes,"
page 18.

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PROPOSED PATROL BOAT FOR USE OF OHIO FISH AND GAME COMMISSION IN WATERS OF LAKE ERIE.

The Ohio Fish and Game Commission will receive bids at Auditor of State's office, Columbus, Ohio, 2 p. m., Tuesday, September 24th, for the construction of a patrol boat for use in the waters of Lake Erie. Plans and specifications may be seen at Auditor of State's office, Columbus, Ohio, or copies of same may be secured upon application from the Secretary of Ohio Fish and Game Commission, Athens, Ohio. The Commission reserves the right to reject any or all bids. Bids may be mailed to Ohio Fish and Game Commission, care Auditor of State's office, Columbus, Ohio.

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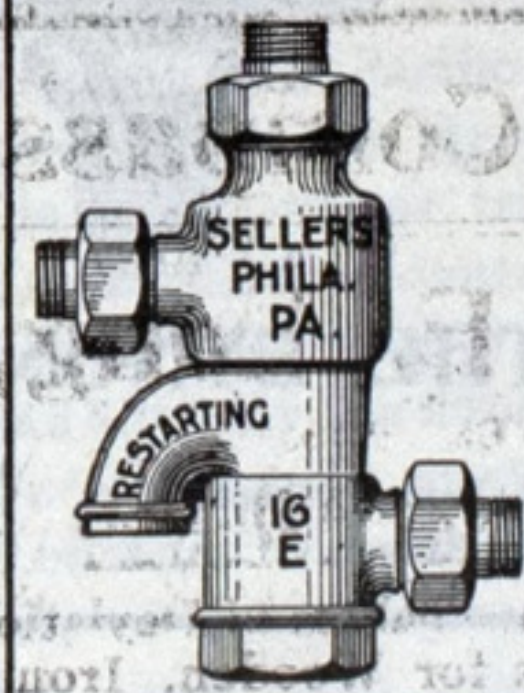
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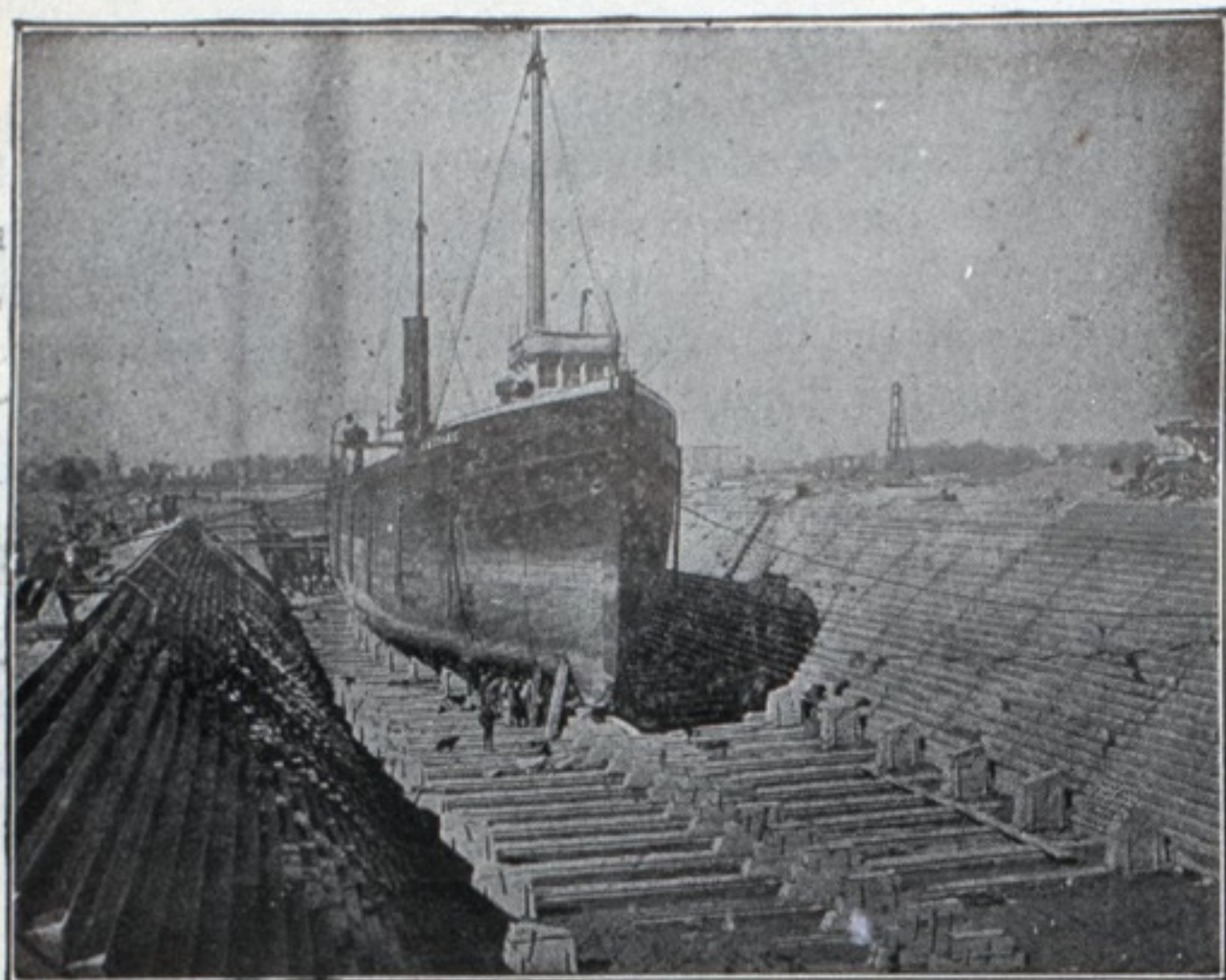
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A MANUAL OF MARINE ENGINEERING. A. E. Seaton. Designing, construction and working of marine machinery. \$6.00.

NAVAL ARCHITECTURE: A MANUAL ON LAYING OFF IRON AND STEEL VESSELS. Thos. H. Watson. Valuable for naval architects as well as beginners in ship yards. \$5.00.

RESISTANCE AND PROPULSION OF SHIPS. By William F. Durand, Principal of the School of Marine Construction, Cornell University. 431 pages, 116 figures. \$5.00.

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